

This is a digital copy of a book that was preserved for generations on library shelves before it was carefully scanned by Google as part of a project to make the world's books discoverable online.

It has survived long enough for the copyright to expire and the book to enter the public domain. A public domain book is one that was never subject to copyright or whose legal copyright term has expired. Whether a book is in the public domain may vary country to country. Public domain books are our gateways to the past, representing a wealth of history, culture and knowledge that's often difficult to discover.

Marks, notations and other marginalia present in the original volume will appear in this file - a reminder of this book's long journey from the publisher to a library and finally to you.

Usage guidelines

Google is proud to partner with libraries to digitize public domain materials and make them widely accessible. Public domain books belong to the public and we are merely their custodians. Nevertheless, this work is expensive, so in order to keep providing this resource, we have taken steps to prevent abuse by commercial parties, including placing technical restrictions on automated querying.

We also ask that you:

+ *Make non-commercial use of the files* We designed Google Book Search for use by individuals, and we request that you use these files for personal, non-commercial purposes.

+ *Refrain from automated querying* Do not send automated queries of any sort to Google's system: If you are conducting research on machine translation, optical character recognition or other areas where access to a large amount of text is helpful, please contact us. We encourage the use of public domain materials for these purposes and may be able to help.

+ *Maintain attribution* The Google "watermark" you see on each file is essential for informing people about this project and helping them find additional materials through Google Book Search. Please do not remove it.

+ *Keep it legal* Whatever your use, remember that you are responsible for ensuring that what you are doing is legal. Do not assume that just because we believe a book is in the public domain for users in the United States, that the work is also in the public domain for users in other countries. Whether a book is still in copyright varies from country to country, and we can't offer guidance on whether any specific use of any specific book is allowed. Please do not assume that a book's appearance in Google Book Search means it can be used in any manner anywhere in the world. Copyright infringement liability can be quite severe.

About Google Book Search

Google's mission is to organize the world's information and to make it universally accessible and useful. Google Book Search helps readers discover the world's books while helping authors and publishers reach new audiences. You can search through the full text of this book on the web at `http://books.google.com/`

A 407400

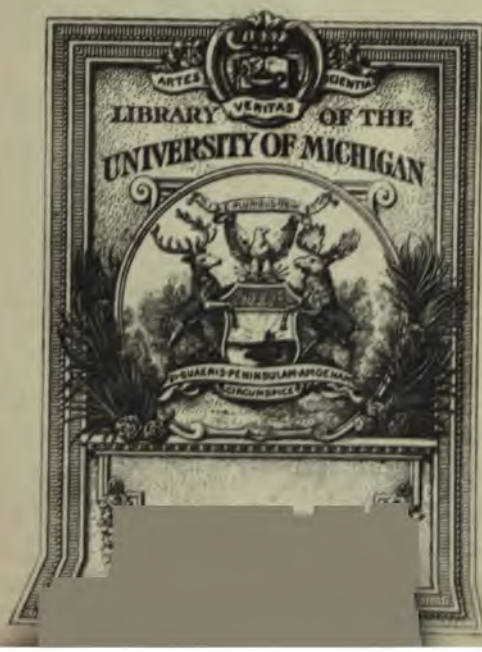
THE
NEWBERRY
LIBRARY,
CHICAGO.
Q
DP
H13

. . . SENN COLLECTION . . .

N. Senn

Donated to the Newberry Library

1896 Withdrawn



610.5
H169
A16



HALF-YEARLY ABSTRACT

OF THE

MEDICAL SCIENCES,

JANUARY—JUNE,

1861.

PRINTED BY J. E. ADLARD, BARTHOLOMEW CLOSE.



THE

HALF-YEARLY ABSTRACT

OF THE

MEDICAL SCIENCES:

BEING

A PRACTICAL AND ANALYTICAL DIGEST OF THE CONTENTS OF THE PRINCIPAL BRITISH AND CONTINENTAL MEDICAL WORKS PUBLISHED IN THE PRECEDING SIX MONTHS:

TOGETHER WITH A

SERIES OF CRITICAL REPORTS ON THE PROGRESS OF MEDICINE AND THE COLLATERAL SCIENCES DURING THE SAME PERIOD.

EDITED BY

W. H. RANKING, M.D. CANTAB.

FELLOW OF THE ROYAL COLLEGE OF PHYSICIANS OF LONDON; PHYSICIAN TO THE NORFOLK AND NORWICH HOSPITAL;

AND

C. B. RADCLIFFE, M.D. LOND.

FELLOW OF THE ROYAL COLLEGE OF PHYSICIANS OF LONDON; PHYSICIAN TO THE WESTMINSTER HOSPITAL; AND LECTURER ON MATERIA MEDICA AT THE WESTMINSTER SCHOOL OF MEDICINE.

Apparatu nobis opus est, et rebus exquisitis undique et collectis, arcessitis, comportatis.
CICERO.

VOL. XXXIII.

JANUARY—JUNE, 1861.

LONDON:

JOHN CHURCHILL, NEW BURLINGTON STREET.

EDINBURGH: MACLACHLAN & CO,

DUBLIN: FANNIN & CO,

MDCCCLXI.

Vol. XXXIV will appear on the 1st of January, 1862.

Books, &c., for notice, to be sent as soon as published (carriage free) to Mr. Churchill, New Burlington Street; or to Dr. Radcliffe, 4, Henrietta Street, Cavendish Square.

LIST OF BRITISH AND FOREIGN PERIODICALS REFERRED TO IN 'THE HALF-YEARLY ABSTRACT.'

BRITISH.

Annals of Anatomy and Physiology.
British Medical Journal.
British and Foreign Medico-Chirurgical Review.
Dublin Quarterly Journal of the Medical Sciences.
Dublin Medical Press.
Dublin Hospital Gazette.
Edinburgh Medical Journal.
Edinburgh New Philosophical Journal.
Glasgow Medical Journal.
Indian Annals of Medical Science.
Journal of Psychological Medicine.
Lancet.
Liverpool Medico-Chirurgical Journal.
London Medical Examiner.
Madras Quarterly Journal of the Medical Sciences.
Medical Circular.
Medical Times and Gazette.
Microscopical Journal.
Pharmaceutical Journal.
Statistical Journal.

AMERICAN.

American Journal of the Medical Sciences.
American Monthly Journal.
Canada Medical Journal.
Charleston Medical Journal and Review.
Montreal Monthly Journal.
New York Journal of Medicine.
North American Medico-Chirurgical Review.
North-Western Medical Journal.
Philadelphia Medical Examiner.

FRENCH.

Annales de Chimie et de Physique.
,, d'Hygiène Publique.
,, Medico-Psychologique.
,, d'Oculistique.
,, des Sciences Naturelles.
Archives Générales de Médecine.
Bulletin de l'Académie de Médecine.
Comptes Rendus.
Gazette des Hôpitaux.
Gazette Hebdomadaire de Médecine et de Chirurgie.
Gazette Médicale de Paris.
Journal de Pharmacie et de Chimie.
L'Union Médicale.

GERMAN.

Annalen der Chemie und Pharmacie.
Archiv für Physiolog. und Patholog. Chemie und Microskopie.
Canstatt's Jahresbericht.
Deutsche Klinik.
Monatsbericht der Akademie zu Berlin.
Müller's Archiv für Anatomie, &c.
Schmidt's Jahrbücher.
Vierteljahrschrift für die Praktische Heilkunde.
Zeitschrift für Rationelle Medicin.

ITALIAN.

Annali Universali di Medicina.

4905.1
18955
201930

NOTICE TO CORRESPONDENTS.

The Editors request that all communications be forwarded (free) to Mr. CHURCHILL, *New Burlington Street, London.*

The Editors are compelled to remind their American correspondents, that no parcels are taken in, unless the entire charge be paid upon them.

CONTENTS OF VOL. XXXIII.

PART I.

PRACTICAL MEDICINE, PATHOLOGY, AND THERAPEUTICS.

I.—*General Questions in Medicine.*

(a) *Hygiène.*

ART.		PAGE
1	The Influence of Contagion on the Rise and Progress of Endemic Disease. *Dr. Milroy*	1
2	Quarantine and the spread of Epidemic Diseases. *Dr. Milroy*	4
3	Wash and be Clean. *Dr. Wynter*	5
4	Hygiène of the Sewing Machine. *Dr. A. K. Gardner*	7
5	On Scotland in a Sanitary point of view. *Mr.* ———	9
6	On Consanguineous Marriages. *Dr.* ———	12
7	On the Communication of Syphilis by Vaccination. *M. Viennois*	13
8	On Arsenic-Eating. (1) *Dr. Roscoe* and (2) *another*	14
9	Instructions respecting Poisonous and Edible Fungi. *The Board of Health for the French Army*	15

(b) *Acute Diseases.*

10.	A Pathognomonic sign of Scarlet Fever. *M. Bouchut*	18
11.	On Scarlet Fever. *Dr. B. W. Richardson*	19

(c) *Chronic Diseases.*

12.	On the Treatment of Intermittent Fever by large doses of Arsenic. *Mr. Chapple*	21
13.	On the Treatment of Malarious Fevers in Ceylon. *Dr. Ward*	23
14.	Scurvy in the United States Army. *Dr.* ———	23
15.	On Gout and its Treatment. *M. Trousseau*	24
16.	Some cases of Hydatid Disease. *Dr. Habershon*	27
17	Syphilization in Vienna. *Dr.* ———	29

II.—*Special Questions in Medicine.*

(a) *Concerning the Nervous System.*

18.	A means of distinguishing between Cerebritis and Fever. *Dr. Wilks*	32
19.	On Delirium Tremens. *Dr. Gairdner*	33
20.	A case of Acute Myelitis and Paraplegia. *Dr. Burrows*	35
21.	On the Treatment of the Paroxysm of Neuralgia. *Dr. Sieveking*	37
22.	On Apoplectiform Cerebral Congestion in relation to Epilepsy. *M. Trousseau*	40
23.	Hæmatic Swellings of the Ears of the Insane. *Dr. Gudden*	43
24.	The Influence of Pregnancy and Parturition upon Insanity. *Dr. Marcé*	44
25.	On Hemicrania or Migrän. *Dr. E. Dubois-Reymond*	44
26.	Case of Traumatic Tetanus successfully treated by Conium. *Dr. Corry*	46
27.	Case of Tetanus in which Stimulants were administered freely. *Drs.* ———	47
28.	A case of Tetanus treated by Aconite. *Dr. George Smith*	50
29.	On the treatment of Epilepsy by Curare. *M. Thiercelin*	51
30.	On a probable cause of Epilepsy. *M. Démaux* and *M. Delhaut*	52
31.	Analysis of fifty-two cases of Epilepsy treated by the Author. *Dr. Sieveking*	53

ART.		PAGE
32.	On Changes in the Retina and Optic Nerve in some Cerebral Affections. *Dr. A. von Graefe*	54
33.	Hysterical Contractions of the Joints cured by cold-water Douche. *Mr. Chandra*	55

(b) *Concerning the Respiratory System.*

34.	A record of thirty-two cases of Pneumonia. *Dr. Handfield Jones*	57
35.	Clinical reports on Pneumonia, based on an analysis of one hundred and thirty-three cases. *Dr. Austin Flint*	58
36.	On the treatment of Pneumonia. *Dr. Austin Flint*	63
37.	A remark on Pleurisy and Thoracentesis. *M. Aran*	65
38.	On the Resorption of Pleuritic Effusions. *Dr. Skoda*	65
39.	Case of Tracheotomy and Artificial Respiration in Croup. *Dr. Radcliffe*	66
40.	On the Pathology of Asthma. *Dr. G. H. Kidd*	68
41.	Case of Universal Emphysema in Pertussis. *Dr. Bierbaum*	69
42.	On the question of Amputation for Diseased Joints in cases of Phthisis. (1) *Dr. Richardson* and (2) *Mr. Quain*	70
43.	On the action of Hydrochloric Acid in Phthisis. *Dr. Cotton*	73
44.	On the action of Liquor Potassæ in Phthisis. *Dr. Cotton*	74
45.	Results of the trials of the Hypophosphites in Phthisis. *Dr. J. Risdon Bennett*	76
46.	Emboli of the Pulmonary Artery. *MM. Trousseau* and *Dumontpellier*	76
47.	On the connection of certain Pulmonary Diseases with Primary Anomalies of the Costal Cartilages. *Dr. W. A. Freund*	77

(c) *Concerning the Circulatory System.*

48.	Remarks on the cause of the Closure of the Valves of the Heart. *Dr. Markham*	79
49.	On the influence of Change of Posture on the characters of Endocardial Murmurs. *Mr. Sydney Ringer*	81
50.	An interesting case of Aneurism of the Aorta. *Dr. Eade*	83
51.	On the influence of Ozonised Cod-Liver Oil upon the Pulse. *Dr. E. Symes Thompson*	86
52.	On the Pathology of Milky Serum. *Dr. C. T. Coote*	87

(d) *Concerning the Alimentary Canal.*

53.	Obstruction and Impaction of the Rectum as the first symptom of Famine. *Dr. Crooke*	88
54.	Remarks on Expectation in Diphtheria. *M. Limousin*	90
55.	On the treatment of Acute Tropical Dysentery by large doses of Ipecacuanha. *Mr. W. R. Cornish*	91
56.	Two cases of Temporary Recovery after Perforation and Peritonitis from Gastric Ulcer. *Dr. D. W. Frazer*	95
57.	Case of Intestinal Perforation, with Worms in the Intestinal Cavity. *Dr. H. Sandwith*	101
58.	Treatment of Tape-worm by Aromatic Sulphuric Acid. *Dr. B. Darrack*	102

(e) *Concerning the Genito-Urinary System.*

59.	On Diabetes. *Dr. Griesinger*	103
60.	On the estimation of Sugar in Diabetic Urine by the loss of density after fermentation. *Dr. Wm. Roberts*	104
61.	A new test for Diabetes. *Dr. E. C. Biddell*	105
62.	On Uræmia. *Dr. B. W. Richardson*	106
63.	On Uræmic Intoxication. *Dr. W. A. Hammond*	107
64.	Total Suppression of Urine for seven days, without head-symptoms. *Mr. J. M. Burton*	108
65.	On the use of Ergot of Rye in retention of Urine from paralysis or inertness of the Bladder. *M. Allier*	110

ART. PAGE
66. Clinical Researches on the action of Diuretic Remedies. *Dr. Austin Flint* . 111
67. On the action of Potash, Soda, Lithia, Lead, Opium, and Colchicum upon the Urine. *Dr. Wm. Moss* 113

(f) *Concerning the Cutaneous System.*

68. Clinical researches into Morbid Pigmentary Changes in the complexion. *Dr. Laycock* 116
69. Is true Ringworm contagious? *Mr. J. Hutchinson* . . . 118
70. On the treatment of Scabies. *Dr. Hebra* 119
71. Case of Urticaria produced by some of the Cetaceous Larvæ. *Dr. J. Herbert Barker* 119
72. Case of "Bloody Sweat." *Dr. T. King Chambers* . . . 121

PART II.—SURGERY.

I.—*General Questions in Surgery.*

(a) *Concerning Wounds and Ulcers.*

73. A remark upon Epithelial Cancers. *Mr. J. Hutchinson* . . 124
74. On the treatment of Suppurating Wounds by Sponges steeped in a Chlorinated Solution. *M. Hervieux* 125
75. On the treatment of Rattle-snake Bite. *Dr. S. W. Mitchell* . . 126
76. On the Bites of the Venomous Serpents of Australia. *Hon. W. Bland* . 127
77. On the treatment of Frost-bites. *Dr. R. Nelson* . . . 130
78. A case of Amputation beneath the Trochanters, in which the Arteries were secured by acupressure. *Dr. P. D. Handisyde* . . . 132
79. Transfusion of Blood in cases of Exhaustion from profuse Suppuration. *Dr. Neudærfer* 133

(b) *Concerning Fractures and Dislocations.*

80. Contributions on the subject of Compound Fracture, being an Analysis of 302 cases. *Mr. Bryant* 133

(c) *Concerning Injuries and Diseases of Vessels.*

81. A proposition for the treatment of Aneurismal Varix. *Mr. Furneux Jordan* 136
82. On the arrest of Venous Hæmorrhage. *M. Langenbeck* . . 136

(d) *Concerning Operations.*

83. On "Drainage par Adossement." *M. Chassaignac* . . . 139
84. On Plaster-of-Paris Bandages for Stumps after Amputation. *Dr. Tranens* 140
85. Observations on the Growth of Long Bones and Stumps. *Mr. Humphry* . 142

II.—*Special Questions in Surgery.*

(a) *Concerning the Head and Neck.*

86. A new method of operating for Glaucoma. *Mr. Nunneley* . . 143
87. On the effects of evacuating the Aqueous Humour in Inflammation of the Eyes, and in some diseases of the Cornea. *Mr. Wardrop* . . 145
88. A new operation for Iridectomy. *Mr. Henry Greenway* . . 150
89. Case of Encysted Abscess in the Vitreous Humour. *Mr. J. G. Hildige* . 152
90. A sequela of Infantile Purulent Ophthalmia, which is an unnoticed cause of Epiphora. *Mr. J. Vose Solomon* 154
91. On the spontaneous Cure of Cataract. *Dr. Peachy* . . . 155
92. On the after-treatment in operations for Cataract. *Dr. J. J. Chisholm* . 155
93. Extraction of a portion of Coal which had been in the Eye ten years, with recovery of perfect sight. *Mr. Nunneley* . . . 156

ART.		PAGE
94.	A new Apparatus for Eye-drops. *Mr. Chalk*	158
95.	Seventh Series of Pathological Researches into the Diseases of the Ear. *Mr. Toynbee*	159
96.	On the means of preventing Caries of the Bone and Cerebral Abscess in Diseases of the Ear. *Mr. Toynbee*	160
97.	A new Instrument for the relief of Deafness. *Mr. Pratt*	161
98.	An interesting case of Gunshot Wound to the Head. *M. Jobert (de Lamballe)*	162
99.	A curious case of Wound in the Head. *Mr. Hilton*	164
100.	On the relief of certain forms of Aphonia by Anæsthetics. *Dr. F. D. Lente*	166
101.	A word on Tracheotomy. *Mr. Maunder*	167
102.	A case in which a Foreign Body was extracted from the Bronchus by a bent wire after Tracheotomy. *Dr. John M. Adler*	168

(b) *Concerning the Trunk, Abdomen, and Pelvis.*

103.	M. Civiale's Clinical Experience in Lithotrity for 1860. *Mr. Henry Thompson*	171
104.	On an operation for extracting a Stone from the Bladder by Urethrotomy, and Dilatation of the Prostatic Urethra by means of a Dilating Staff. *Mr. Wood*	172
105.	On the radical cure of Reducible Hernia. *Mr. Syme*	175
106.	A new radical cure for Hernia. *Dr. J. Morton*	177
107.	A new operation for the radical cure of Hernia. *Dr. Chisholm*	178
108.	A case of Strangulated Hernia treated by inverting the Patient. *Mr. Henry Power*	180
109	Some suggestions for an improved practice in Strangulated Hernia. *Mr. Bryant*	180
110	A new operation for the radical cure of Hernia. *Dr. Agnew*	182
111	Remarks on Entero-Epiplocele. *M. Jobert (de Lamballe)*	183
112	Three cases of Orchitis treated by Incision into the Tunica Albuginea Testis. *Dr. Hutchinson*	186
113	On the employment of Pressure in the treatment of Buboes and enlarged Glands. *Dr. D. Macpherson*	187
114	On the treatment of Gleet by Compression. *Dr. G. P. Hackenburg*	187
115	On the Diagnostic Value of the Iodine Injection in Fistula in Ano, and on Incision from within outwards. *M. Amussat*	189
116	A simple mode of insuring the proper Healing of Fistula in Ano after Incision, without Plugging. *Dr. J. J. Chisholm*	190
117	On the treatment of Prolapsus of the Rectum by Hypodermic Injection of Strychnia. *M. Foucher*	190
118	Case of Spina Bifida successfully treated by Iodine Injections. *Dr. Brainard*	191
119	Recovery after complete Transfixion of the Abdomen by a Bayonet. *Mr. R. Cooper Todd*	192
120	Case of Rupture of Rectus Abdominis. *M. Légouest*	194

(c) *Concerning the Upper Extremity.*

121	New method of treating long-standing Dislocations of the Scapulo-Clavicular Articulation. *Dr. E. S. Cooper*	196
122	On the Diagnosis of Dislocations of the Shoulder. *M. Maisonneuve*	197

(d) *Concerning the Lower Extremity.*

123	On Dislocation of the Head of the Femur into the Obturator Foramen, with preservation of the Movements of the Bone. *M. Sédillot*	198
124	On the Curability of Intra-capsular Fracture of the Neck of the Femur. *Dr. Frederick J. Brown*	200
125	A new Mode of Tying the Femoral Artery. *Dr. G. H. Porter*	201
126	On Elephantiasis Arabum, or "Cochin Leg." *Mr. Francis Day*	206
127	Notes on an affection called "Burning of the Feet." *Mr. Waring*	210
128	Treatment of Excessive Perspiration of the Feet. *Mr. Gaffard*	212

PART III.

MIDWIFERY AND DISEASES OF WOMEN AND CHILDREN.

(a) *Concerning Pregnancy and Parturition.*

ART. PAGE

129. On Enlargement of the Thyroid Gland during Pregnancy. *M. Guillot* . 214
130. On the treatment of cases of Abortion, in which the Membranes and Placenta are retained. *Dr. Priestley* 216
131. On the Indications and Operations for the Induction of Premature Labour, and the Acceleration of Labour. *Dr. Barnes* 218
132. Practical Observations on "supporting the Perinæum." *Dr. Graily Hewitt* 219
133. A cause of Protracted Labour not generally recognised, and easily removable. *Dr. de Laffore* 229
134. Pelvic Contraction, and the duties it imposes on the practitioner during Pregnancy and Labour. *M. Pajot* 225
135. On a new sign of Post-partum Detachment of the Placenta. *Mr. John Clay* 227
136. On concealed Accidental Hæmorrhage at the latter end of Pregnancy and during Labour. *Dr. J. Braxton Hicks* 229
137. A case of Ruptured Perinæum, in which the child was born between the Os Vaginæ and Anus. *Mr. J. Baker Brown.* . . . 232

(b) *Concerning the Diseases of Women.*

138. A Clinical Treatise on Diseases of Women. *Drs. Bernutz* and *Goupil* . 232
139. On the use of Apiol in Dysmenorrhœa. *M. Baillot* . . . 233
140. On the prophylactic treatment of some Morbid Symptoms coincident with Lactation. *Mr. Paul Delmas* 233
141. Annular Laceration of the Cervix Uteri. *Dr. T. Herbert Barker* . . 235
142. Cases of Ruptured Perinæum, with subsequent delivery without laceration. *Mr. I. Baker Brown* 236
143. On the use of Opiates and Sedatives in the treatment of Uterine Inflammation. *Dr. Tilt* 236
144. On the use of Tincture of Actæa in Puerperal Hypochondriasis and Depression. *Dr. Simpson* 237
145. An inquiry into the correctness of the doctrine of William Hunter, in regard to Retroflexion and Retroversion of the Pregnant Uterus. *Dr. W. Tyler Smith* 239
146. On Ovariotomy, with cases and remarks on the different types of the operation, and causes of its Mortality. *Dr. W. Tyler Smith* . . . 241
147. Further observations on the Structure and Treatment of Uterine Polypi. *Dr. Robert Lee* 243
148. On Fibrous Tumours of the Uterus treated by Surgical means. *Mr. I. Baker Brown* 244
149. Contributions to the history of Abortions and Uterine Polypi. *Dr. Rokitansky* 246
150. A rare termination of an Uterine Fibroid. *Dr. E. Lumpe* . . . 248
151. On the use of Pessaries. *Dr. Peaslee* and *others* 249
152. The Pessary a hurtful remedial agent. *Dr. W. M. Turner* . . . 252

(c) *Concerning Diseases of Children.*

153. Errors respecting Dentition. *Dr. Jacobi* 253
154. An evil arising from the administration of Spoon-meat to Children at the Breast. *M. Dubois* 255
155. On Albuminoid Disease. *Dr. Jenner* 256
156. On a previously unobserved Preventible Cause of Idiocy, Imbecility, and the allied affections. *Mr. Ballard* 257
157. On Iritis, as it occurs in Syphilitic Infants. *Mr. J. Hutchinson* . . 260
158. Congenital Phymosis considered as a frequent cause of Irritation of the Urinary Organs in Young Children. *Mr. Price* 261

REPORTS ON THE PROGRESS OF THE MEDICAL SCIENCES.

I.—*Report on Materia Medica and Therapeutics.*

PAGE

1. *Mr. T. Spencer Wells*, on the Scale of Medicines with which Merchant Vessels are furnished, &c. 267
2. *Mr. Erasmus Wilson*, on the Eastern or Turkish Bath . . . 267
3. *Dr. Edward Smith*, the action of Tea and Alcohol contrasted . . 267
4. *Dr. Mantegazza*, on the Dietetic and Medicinal Properties of Coca . 268
5. *Dr. Carrière*, on the Whey and Grape Cures in Germany and Switzerland . 272
6. *Dr. Habershon*, on the Injurious Effects of Mercury in the treatment of disease . 275
7. *Drs. Anderson* and *Maddin*, on Opium as a remedy in poisoning by Datura . 276
8. *MM. Cazin, Perroud, & Comégys*, on the Antagonistic action of Opium and Belladonna 279
9. *Dr. B. W. Richardson*, on the Physiological and Therapeutical Properties of Peroxide of Hydrogen 280
10. *M. Rilliet*, on Iodism 283
11. *M. O'Rorke*, on the Manna of the Hebrews 285
12. *Dr. Vincke*, on Penghawar Djambi 289
13. *Dr. Althaus*, Can Lightning cure Disease? 291
14. *M. Jeannel*, a Method of imparting an Agreeable Flavour to Cod-Liver Oil, &c. 292
15. *Dr. Christian*, on the Restoration of Persons apparently Drowned . . 293
16. *M. Vella*, on the mutually Antidotal Relations of Strychnia and Woorara . 294
17. *Dr. E. Brown-Séquard*, on the Effects of an Elevated Temperature in the treatment of Poisoning 295

II.—*Report on Physiology.*

1. *Dr. Dalton's* Treatise on Human Physiology 297
2. *Mr. Baxter*, on Organic Polarity 298
3. *Dr. B. W. Richardson*, on certain Phenomena of Life . . . 298
4. *Mr. Flower's* Diagrams of the Nerves of the Human Body . . . 302
5. *Mr. Durham*, on the Physiology of Sleep 302
6. *Dr. Beale*, on the Distribution of the Nerves in the elementary fibres of Striped Muscle 303
7. *Sir John F. W. Herschell*, on Colour Blindness 304
8. *Drs. Mitchell and Richardson*, on the Artificial Production of Cataract . 305
9. *Dr. Radcliffe*, on the immediate cause of Muscular Contraction and Sensation . 308
10. *M. A. Chauveau*, on the Physiological Action of Interrupted and Continuous Electrical Currents 312
11. *M. Matteucci's* Researches on the Electric Function of the Torpedo . 321
12. *Dr. H. Meyer*, on the Influence of the Nerves on the Venous Colour of the Blood . 323
13. *Mr. J. Lister*, on the Coagulation of the Blood . . . 323
14. *Dr. Halford*, on the Action and Sounds of the Heart . . . 326
15. *Dr. Sucquet*, on the Circulation of the Blood in the Limbs and Head of Man . 328
16. *Mr. Rouget*, on the Action of Nicotine upon the Heart . . . 330
17. *Mr. Waters*, on the Anatomy of the Human Lung . . . 330
18. *Dr. Edward Smith's* Inquiries into the Phenomena of Respiration . . 331
19. *Dr. Harley*, on the Saccharine Functions of the Liver . . . 333
20. *Dr. Robert McDonnell*, on the Formation of Sugar and Amyloid Substance in the Animal Economy 334
21. *M. Colin*, on the Production of Sugar in relation to the Absorption of Fat and the Development of Animal Heat 338
22. *Mr. Mayer*, a New Theory of the Nature of Corpora Amylacea . . 339
23. *M. Busch*, on the Physiology of Digestion 339
24. *Dr. Corbett*, on the Deglutition of Alimentary Fluids . . . 341
25. *Drs. Hare* and *Harris*, cases in which Milk was secreted from the Axilla . 342
26. *M. Ollier*, on the Artificial Production of Bone and Osseous Grafts . . 344
27. *Mr. Adams*, on the Reparative Process in Human Tendons after subcutaneous division 345
28. *Mr. Carre*, a case of Dentition in Old Age 345
29. *Mr. Eccles*, on the Physiology of Widowhood 346
30. *M. Rouget's* Researches upon the Erectile Organs of the Female . . 347

HALF-YEARLY ABSTRACT

OF

THE MEDICAL SCIENCES,

&c. &c.

PART I.

PRACTICAL MEDICINE, PATHOLOGY, & THERAPEUTICS.

SECT. I.—GENERAL QUESTIONS IN MEDICINE.

(A) HYGIENE.

ART. 1.—*The Influence of Contagion on the rise and progress of Endemic Diseases.* By Dr. MILROY.

(*Proceedings of the Epidemiological Society. Lancet*, Feb. 2, 1861.)

DR. MILROY uses the term contagion to designate the property of a disease being communicable or transmissible from a sick person to one in health, the transmission being either direct or immediate from the sick to the healthy, or occurring through the intervention, and, it may be, by the conveyance to a great distance, of an object which has become infected with the *materies morbi*.

The simplest kind of contagion is that where a disease is communicable in one way only—namely, by the transmission of a palpable poisonous matter conveyed from the body of the sick and applied to that of the healthy person, either immediately or through the medium of anything which has been in direct contact with the sick—as, for example, his bed and body clothes. The itch, some forms of porrigo, syphilis, gonorrhœa, and hydrophobia are in this category. The idea of the atmospheric dissemination of the poison of any of these diseases is scarcely recognised in the present day, although in former times it was widely entertained in reference to one at least of them, namely, syphilis.

Dr. Milroy inquires—Do any of the above diseases occur spontaneously; *i.e.* quite independently of all discoverable transmission of the poison from an antecedent cause? And if such be the fact, what proportion do such instances of self-engendered disease bear to the instances of contagious propagation? The question of the *generatio de novo* of diseases which may afterwards propagate themselves from the sick to the healthy is a difficult one, but it is obvious that it must be fairly and minutely looked into in all attempts to investigate the influence of contagion on their development and diffusion. It seems more than probable that some at least of the diseases mentioned may thus arise. For example, the occurrence of hydrophobia *de novo* in the canine race can hardly be doubted; if so, a remarkable illustration of the new development of a specific contagious poison is at once presented to our notice. What is true of one may be reasonably presumed of some others. Besides this point, there is another which deserves mention. Are there not good grounds for supposing that the poisonous matter of one or more of the diseases already enumerated may at times be transmitted from the infected to healthy persons, without direct or indirect contact with the palpable virus, and through the agency of atmospheric dispersion? In the case of gonorrhœal and other kinds of ophthalmia, it has been more than once remarked that the simple visit to a ward where a number of patients with the disease have been congregated has occasionally been followed by an attack of the malady, when every precaution has been taken to avoid contact with the sick or with any articles near them.

Whatever doubt there may be as to the twofold mode of transmission of any of the preceding diseases, there are some diseases which are certainly communicable in both ways; viz., by direct and palpable contact or application, and also by the atmospheric dispersion of the *materies morbi*, and its absorption into the skin, the lungs, or the alimentary passages. Smallpox obviously belongs to this class. The terrible epizootic disease of glanders, according to the best veterinarian authorities, is another illustration. The true oriental plague was, in the time of Dr. Mead, when he wrote his celebrated essay 'On Pestilential Contagion,' and for forty or fifty years subsequently, generally considered transmissible in both ways—the contactual and the effluvial or atmospheric. In the last quarter of the last century, and until within twenty-five or thirty years ago, the strange belief that the plague was communicable only by direct contact, and never by atmospheric dissemination, held possession of the schools. Since the scientific investigation of the disease in the epidemic of Egypt during 1834-35, the nature and mode of action of the contagion of the plague have been found to be quite similar to the contagion of typhus fever. In other respects, too, the two diseases have been shown to be closely allied in their predisponent, exciting, and favouring causes, and to be controlled by the same sanitary and hygienic means.

Are such diseases as glanders, the plague, and typhus, liable to occur quite independently of antecedent cases? In other words, are they liable to become developed *de novo*. Few, if any, physicians in

the present day will doubt that typhus is continually occurring spontaneously under certain tolerably well-known conditions, and apart from all suspicion of transmission from previous cases. Dr. Murchison has recently contributed some valuable papers illustrative of this subject, and has greatly strengthened the conclusions of former writers. The most experienced veterinarians are agreed, that glanders is both a self-engendered and a contagious disease. The lectures of the late Mr. Youatt afford important evidence on this head. Like typhus, the glanders is a disease which happily is much under the control of judicious hygiene. If not the offspring, it is at least the foster-child, of filth, overcrowding, and neglect.

That the plague is liable to be developed *de novo*, is proved beyond doubt by its recent appearance on the Barbary coast, after an absence of many years in that district, and while the disease was altogether unknown in any other part of the Ottoman dominions. That yellow fever is, under certain circumstances of insalubrity, apt to manifest contagious properties, cannot be reasonably denied, as in the case of the *Eclair* at Boa Vista, and in the convict hulks at Bermuda in 1853, as well as in other instances. In pure dwellings, with attention to cleanliness and due ventilation, the contagiousness of the disease ceases to maintain itself. In upwards of a thousand cases treated in the Quarantine Hospital at New York, no instance occurred of discoverable communication from the sick to the well. The contagious power of malignant cholera seems to be as much feebler than that of yellow fever, as its power of migratory diffusiveness is much greater. Transmission from person to person has certainly been noted not unfrequently in limited groups of cases, occurring generally in close unventilated rooms, or in overcrowded wards of hospitals, lunatic asylums, &c.; but the general spread of the pestilence in a community is as certainly not explicable in such a manner. Personal contagion plays but a small and subordinate part in its diffusion. That both yellow fever and cholera may now and then become developed *de novo* in certain climates and regions of the world, can scarcely be doubted by any one. The contagion of influenza in a limited and partial degree is recognised by most writers on that disease. In the 'Annals of Influenza,' by the late Dr. Theophilus Thompson, published by the Sydenham Society, the evidence is fairly stated. That certain kinds of angina or cynanche are also to some extent transmissible in this way, is generally admitted; and the recent inquiries respecting diphtheria by the Privy Council and by the Epidemiological Society have served to show that this disease is occasionally contagious, although contagion cannot be regarded as the principal, far less the only, cause of its spreading.

Dysentery affords a well-marked instance of a disease which, not primarily communicable, is apt to become contagious under circumstances unfavorable to healthy existence. That it is generable *de novo*, is beyond doubt. Dr. Latham's Reports on the Millbank Penitentiary afford strong evidence on both points. Erysipelas also belongs to the same category. Certain forms of puerperal fever are amongst the most communicable of fevers, and their history affords much subject of illustration to the present inquiry. The best ascertained facts

have been well stated by Dr. Tyler Smith. The exanthemata are the only diseases which remain to be noticed. No one can dispute the eminently contagious property of these fevers, and of whooping-cough generally associated with them. The power of transmitting from the sick to the healthy belongs more essentially and inherently to these diseases than to any others. They have, moreover, other features which distinguish them, as respects the time of life at which they usually appear, the infrequency of second attacks, &c. Their development and spread are certainly much less under the control of sanitary measures than most of the other diseases mentioned; they being, on the whole, more independent of place or localities than the latter, and dependent rather on poisons or individual diathesis. Do any of them ever occur independently of antecedent cases? Perhaps not; but the question has not been examined in all its details with sufficiently searching care. Whooping-cough has certainly appeared in some countries where it would be difficult to trace its origin, and it is a curious circumstance that varicella seems occasionally to manifest itself in the same way.

In conclusion, Dr. Milroy strongly urges the importance of far greater exactitude and comprehensiveness in observing and recording facts respecting the development and diffusion of epidemic diseases than have generally been adopted.

Art. 2.—*Quarantine and the Spread of Epidemic Diseases.* By Dr. Gavin Milroy.

(*The Medical Critic and Psychol. Journal*, April, 1861.)

The really important question is to determine the circumstances or conditions in which a disease is apt to manifest a contagious property, and to determine the means, if such exist, by which such property may be neutralized or prevented. Now experience has incontestably shown that, just as the disease never springs up primarily in a place where the atmosphere is fresh and pure, so it cannot continue to exist, far less to thrive, where such an atmosphere prevails. The same aerial condition is necessary for the reproduction as for the original production of the morbific germ.

It is by acting upon and giving effect to this simple rule of sanitary art that Quarantine may be made truly useful, and an instrument of much good. The actual sick, and those in whom the early or premonitory symptoms of the sick are present, should be removed as promptly as possible from the ship on board which they have sickened; and be transferred to clean and airy quarters, either on shore or afloat. Their chances of recovery will thus be greatly promoted, and the risk of the extension of the disease will be reduced to the minimum.

The detention and confinement of the crew and passengers who have been in perfect health during the voyage, and are so upon arrival, merely because they have recently come from a country where an epidemic disease existed when they left, or because a case of sickness may have occurred on board the vessel, and on the suspicion that

the disease may be dormant in their systems, or that its germs may be somehow or other clinging to their persons, appear to be unnecessary on the score of the public health, and might be safely discontinued. The practice has been rather based upon theoretical fears than derived from the results of observation and experience.

There is no reliable evidence to show that any pestilential disease was ever introduced into a country by the cargo of a ship, or by the ordinary articles of trade or merchandize; always provided that they were in a fresh, unputrescent condition, and excluding, of course, from the category such articles as the bedding and body clothing of the sick. Among the thousands of men who have been employed, since the beginning of the present century, in the lazarets of Malta, Marseilles, and Genoa, in handling the cotton-bales and other goods on board vessels from Turkey and Egypt, not a single instance of sickness attributable to the occupation has occurred. If this be true in respect to the plague, how much more must it be in respect of yellow fever, or cholera, the contagious property of which is universally admitted to be much less active.

It is to the ship itself far more than to the cargo on board that the attention of quarantine authorities should be directed. As a foul, infected ship may unquestionably be the vehicle of introducing disease, if allowed in this state to lie alongside other vessels, more especially in a crowded port, or close to dwellings on the shore, it is right that the most stringent measures of thorough cleansing and disinfection should be required before she is admitted to free *pratique*.

There is much room for the amendment of the sanitary condition of the merchant shipping of all countries; and just in proportion as this is more attended to, and the sanitary state of seaports is improved, so will the necessity for quarantine restrictions diminish.

Moreover, governments as well as peoples should ever remember that they have much more to dread from home-bred diseases never absent than from the occasional visitations of any foreign pestilence, however formidable it may be; and also that the very same measures which experience has shown will largely prevent the one will infallibly disarm the other of its power.

ART. 3.—*Wash and be clean.* By Dr. WYNTER.

(*British Med. Journal*, Nov. 10, 1860.)

The Quarterly Report of the Registrar-General just issued has this significant sentence: "The weather of this quarter (ending September 30th) may be looked upon as an experiment upon the health of the people." What we have been pleased to stigmatise as the most wretched and unseasonable year within the memory of man is now nearly past; and, as far as we have yet "taken stock of it," we find that, on the score of health at least, we have sadly maligned it. Had there been no such person as a Registrar-General, and had we only to depend upon the experience of hearsay evidence, the probability is that the year 1860 would have been branded for the next generation as pre-eminently a sickly season. We should have been told that in

this year all nature was depressed; that the flowers had no perfume, the fruit no flavour, the cattle no food, and man no enjoyment. All these charges against the year that is past are true enough; nevertheless, we put aside our feelings, banish all sentimentality, and consult the national register; and, lo! we are forced to confess that we have been labouring under a delusion, as far as the public health is concerned; and the poor year stands forth as the most remarkably healthy one we have had perhaps in the century. How could we more forcibly illustrate the value of statistics? The three months of July, August, and September, usually the finest in the year, were this season miserable beyond description, their mean temperature being only 56·2°, or less by 3·3° than that of any corresponding season for eighty-nine years; that is to say, there are very few living men who have experienced so cold a period of three summer months. With this low temperature there was a very large rainfall; indeed, the abundance of the rain must be considered one of the main causes of the low state of the thermometer. For years there has been a deficiency in the rainfall; this season we have made up for it; the excess during the driest months of the year has been 2·1 inches. Nevertheless, under these wretched summer skies, death has ceased to be as busy as usual amongst us. According to the general average of the season, the rate of mortality should have been twenty per thousand; it actually was only seventeen per thousand. Thus three living beings out of every community of a thousand owe their lives to the wretched weather!

There is a very prevalent opinion that much of the diarrhœa existing in the summer months is attributable to the eating of fruit—especially unripe fruit; hence fruit is unnecessarily denied by fond mothers to little children, and the bounties of Providence are practically stigmatised as a nuisance. This summer we have been able to test the value of this universal opinion, and we must say the evidence goes to prove that fruit is not guilty. It cannot be denied, for instance, that there has been an abundance of fruit, and that it has been far less ripe than usual; nevertheless, diarrhœa—the bugaboo of fruit-eaters—has been reduced to a minimum. The inference seems to be, that this disease is not a consequence of enjoying the bounties of the Almighty, but simply of a high temperature.

The improved condition of the public health during the past quarter is chiefly conspicuous in towns; and the Registrar-General believes that this is a consequence of the excessive rain-falls flushing the sewers and carrying off all animal impurities. Thus in Wolverhampton, Walsall, West Bromwich, and Dudley, where the water-supply is usually deficient, the late rains have reduced the mortality enormously; and in Birmingham the deaths during the summer have fallen one third part. The Registrar-General seems inclined to draw a general principle from these facts—viz.: "It is probable that the ordinary water-supply of a place is bad, where its mortality is greatly reduced by heavy rains."

In the north-western counties, the decrease in the mortality is not so great as in other counties; and this is attributed to the great prevalence of middens in Lancashire. This is a very instructive fact,

which sanitarians should not lose sight of; when the excrementitious deposits of a family are deposited where they cannot be carried away, the increased rain-fall only acts as a solvent to produce unhealthy exhalations. The value of an abundant water-supply to towns is made manifest by the results of the summer just passed. We cannot command the rain in the heat of summer, it is true, but we can always command water; and, if the health of towns in the summer season mainly depends upon the regularity with which noxious matters are removed from the sewers by flushing them, the existence of excessive disease may be taken as a measure of the neglect of the authorities. If the exceptional weather of 1860 may be said to have settled this point, its gloomy skies and wintry temperature will have proved more advantageous to us than the most splendid summer, with its usual concomitants of abundance and prosperity.

ART. 4.—*The Hygiène of the Sewing Machine.* By Dr. A. K. GARDNER, Professor of Clinical Midwifery in the New York Medical College.

(*American Med. Times*, Dec. 15 and 22, 1860.)

After a careful investigation of the subject, Dr. Gardner says: "I claim that the sewing machine is the great boon of the nineteenth century, to the women of Christendom, and of the world—that it has manumitted the *white slave*." He says also, "With the view of learning the facts that actually exist, I have made as careful inquiries as I knew how, of those running large numbers of machines for manufacturing purposes, of the girls actually and for many years working upon them, for their own experience and observation of those working by their side in the same factories, of physicians whose peculiar practice would lead them to note any general amount of disease among this class of girls, and now offer the result and many of the details of the inquiry.

"Douglas and Sherwood, extensive manufacturers of shirts, for several years ran some two hundred and fifty of Wheeler and Wilson's machines constantly, and were, till a change in their business made less machine work necessary, in the daily use of more machines than any one else in the United States, and probably in the world. Mr. Sherwood, under whose daily supervision was this portion of the work, said to me, 'That he had yet to see the first injurious effect from working a machine. Many girls who had come into his employ pale and weak, complaining of pain in the back, and at first unable to do a day's work, speedily became able to work their full nine hours, and became free from pain, robust and healthy. He has never seen but one girl (who has a curvature in the spine between the shoulders) who was unable to use the machine. Many with spinal affections and curvatures, work full time without any bad results. The girls are rarely away from work from ill health. The girls, when they first come, after a day's work, are obliged to ride home from fatigue—but they soon walk home. Now, he finds that those who *sit sewing* in the old-fashioned way, are so tired by night that almost all of them ride

home, but the machine workers and those on their feet all day, walking around the hoop-frame, bending in every posture, now almost invariably walk to and from their homes, several miles distant. His own sister, who was fearful to try the machine, on account of a "weak back," has been enabled to use it ten and twelve hours a day, not only without injury but even with positive benefit, as her health has materially improved, since commencing it.'

"One lady in a private family stated that she had found an attack of neuralgia, to which she was very susceptible, to always ensue from the withdrawal of the animal heat through the iron foot-plate, whenever she wore thin slippers, but on covering the plate with a thick bit of carpeting such a result was never afterwards noted.

"I have never heard of an instance of muscular rheumatism or cramps, affections most probable to be produced by such unusual exercise, arising from the use of any machine.

"From a visit to the factory of Payan and Carhart, where fifty Wheeler and Wilson's, and fifty Singer's machines are in daily operation in the manufacture of clothing, I found that the heavy Singer's machines were worked by compressed air—that so much muscular force was required to carry the machine on at a *paying speed*, that pushing the needle through heavy beaver cloth and buckram, was too much for the muscular power of the girls—but with machinery they were enabled to run them as fast as might be desired. The working of these heavy machines with the foot did not, however, produce any disease. Exhaustion from overwork in this as in every other overwork, was necessarily felt. The unanimous testimony was, that the machine had wrought a benefit upon the labourer. In particular it had enabled work to be so systematized as to make the employment of a large number of operatives, in large and well aërated and salubrious rooms, not only mutually profitable, but the workman could, from the system enabled to be introduced, make more wages in the factory than at home; thus the day was not as heretofore, spent in a small apartment, containing bed, cooking-stove, children, work-bench, &c., but after a healthy morning's walk in a pure atmosphere, and amid cheerful companions, again to be refreshed by the walk home after the labours of the day were finished. It was the opinion of those who worked for years on the board as journeymen tailors, and several years at the machine, that the latter was far better for health and spirits; that the mind was sharpened by the stimulus of the machinery, and the machine worker was intellectually brighter than the mere sewer.

"Seligman and Co. employ ninety-four of Singer's machines in making clothing. Some of the girls who had worked these heavy machines on thick beaver cloth and other heavy clothing for some years, had found, as a general thing, that the girls in the shop were as healthy as ordinary. True, when working on heavy goods for ten hours, they did feel fatigued, but they never suffered from any special diseases, never had heard of any spinal difficulties, neuralgia, amenorrhœa, or leucorrhœas. That there were seldom more than two or three of their number absent during a day, out of their whole number, for any and all causes. This was the unanimous testimony

of many of those working the machines in answer to my special and direct inquiries.

"Davies and Co., extensive shirt and clothing manufacturers, work between three and four hundred Wheeler and Wilson's machines, and never heard from any of their *employées* the least suspicion of the working of machines being other than perfectly healthy employment. At their immense factory in New Haven (visited by the members of the American Medical Association, last spring, by invitation), where nearly four hundred Wheeler and Wilson's machines are used, the same result is found upon the health of the workers.

"Finding, therefore, no proof that physical disease originates, or is aggravated even, by the use of the sewing machine, I am forced to believe that in the moderate use of the muscles of the lower extremities, the analogy holds good in this as in any other form of labour, that use strengthens the organs—that while the use of half of the body is not so beneficial for health, or for an equal development of the entire body, as if the sewing machine exercised the whole frame, that it is far better than no exercise at all, as is the lot of the confined hand-sewers."

Dr. Gardner is of opinion also, that the sewing machine is less trying to the eye than the needle, and he quotes the evidence of two ophthalmic surgeons to the same effect.

ART. 5.—*On Scotland in a sanitary point of view.*

(*The Times*, May 10, 1861.)

"Scotland is of an extremely irregular figure, and its mainland is so broken up by promontories and indented by bays or firths, that even at its most solid part there are very few points which are more than forty miles distant from the sea." This description, no doubt, is perfectly accurate; but when we add that it is simply an introduction to the Registrar-General's Report of the Births, Deaths, and Marriages in the country aforesaid, our readers will fancy that the exordium is rather an ambitious one. Yet it is not so. There is neither conceit nor irrelevance in the matter. The Report traces the rate of mortality to the ordinary conditions of weather, and, as these conditions depend greatly on the configuration of the country, it follows that geography enters very materially into such statistics. There is, however, apparently, a curious contradiction in the conclusions of the document before us. The reporter establishes the proposition that in these latitudes it is the cold which kills; and we all remember that the Scottish year is composed of "ten months of winter and two months of very cold weather." Nevertheless, though cold is so killing, and Scotland is so cold, we are led to the belief that Scotland is "one of the very healthiest countries on the face of the globe." It is worth while to look into these statistics for a minute. Considering what weather we have got at the present moment, it will be rather a consolation if we can find out that white frosts and north-east winds are ever so remotely productive of advantage.

There seems to be no doubt that Scotland is really a healthy coun-

try. Besides the direct evidence of the death-rate, which shows a mortality decidedly below the ordinary mortality of England, we are told that 10 per cent. of all the registered deaths in Scotland are set down to old age alone. We must admit, therefore, the first proposition, and we certainly do not know how to impugn the second. Scotland is really a cold place, and tourists are always assured that if they get a month of fine weather even in August they may consider themselves truly fortunate. So we have to reconcile an excellent condition of public health with very indifferent conditions of atmosphere; and this in the teeth of an assertion that mortality increases as cold increases, and diminishes, with one reservation, as the temperature rises. Nor is this assertion to be questioned, for the tables of mortality completely bear it out. We know very well from our own weekly reports that a low temperature is followed by an increase in the tale of deaths, and that as the cold moderates the return is improved. On the other hand, chilly and comfortless as last summer was, it was a healthy season, and, if there was not much enjoyment, there was unusually little disease.

The truth is, that excess in the direction either of heat or cold is prejudicial to health, but the operation is different in the two cases; while cold, in moderation, is more conducive to physical vigour than heat. A cold country is healthier than a hot one, and yet, when the cold becomes greater than ordinary, it is fatal to life. The average temperature of Scotland may be lower than the average temperature of England, and still leave Scotland healthier than England; but in both countries alike a rigorous season produces an increase of deaths. It is probable, indeed, that the action of cold is less intrinsically fatal than the action of heat, though it is rendered more destructive by the social conditions existing among us. With good food, good clothing, good lodging, and good fires, a man in good health will endure a great degree of cold without injury; but there is always a large portion of the population unprovided with these safeguards, and it is here that cold is found to tell. Elderly and weakly people are unable to resist a severe winter, and the same liabilities prove too heavy for the ill-fed and ill-protected poor. Heat, on the other hand, developes a formidable class of complaints almost unknown in cold weather, and has a tendency, besides, to impair the vigour of the body. In the Report before us it is considered surprising that "epidemics" should be so commonly attributed to the effects of heat, whereas they are far more likely to be generated by cold. This, however, is only a matter of definitions. When people speak of "epidemics" they generally mean the diseases of autumn. The "prevailing epidemic" is usually another term for some type of cholera, and cholera in this country is peculiar to the seasons when the heat is greatest. It is perfectly true that the bowel complaints which a hot summer commonly brings on are by no means so fatal as the disorders produced or aggravated by cold. It is also true [illegible] ese disorders often assume a character as truly epidemical as [illegible]a or dysentery; but in common estimation they are n[illegible] Being more thoroughly naturalized among us, and a[illegible] alarming symptoms, they attract less attention, and [illegible]th the title of plagues, though

they are more deadly than plagues themselves. That is the true explanation of the case. Heat, at rare intervals and under peculiar conditions, generates a class of disorders which we connect with the pestilences of tropical climates, and of which, as strange visitors, we stand in some awe. Cold has not in itself such a generating power, but it quickens and aggravates a class of diseases from which we are never free; and, as it thus acts over a larger area, and with much greater frequency, its effects are the more destructive in reality, though less formidable in appearance.

Our true "epidemics" are diseases of the lungs and throat, and in this respect Scotland stands on exactly the same footing as England. It is said, however, that the Western Islands of Scotland are peculiarly free from these disorders, and that there is no region to which our consumptive patients are sent which can bear a comparison with those places for favorable conditions of atmosphere. At the time when "cold, arid, easterly breezes are blowing over Britain," these islands, we are assured, enjoy a "mild winter climate" and a salutary "humidity of atmosphere;" and, indeed, the whole county of Argyle is represented as a Madeira in its way. For all this, however, phthisis heads the list of destructive diseases in Scotland as well as in England, and bronchitis, as in England, comes second. After these parallels, however, there is a divergence. The third on the Scottish list is typhus, which with us only ranks as sixth in deadliness; while diarrhœa, which in England holds the seventh place, in Scotland drops down to the ninth. It is plain, however, even from these statistics, that the mortality contingent upon excessive heat is comparatively inconsiderable, for it is all expressed under the head of diarrhœa, and yet diarrhœa makes little figure in the average of returns.

The Report contains some curious proofs of the doctrine that mortality depends, not upon ordinary height or ordinary lowness of temperature, but, as we have said, upon extremes. The most fatal months with us are the winter months, or rather the months immediately succeeding the coldest period; in other climes the months following the hottest period are those in which the deaths are most numerous. It seems to be established, beyond a doubt, that the influence of weather upon health does really exceed all other influences, and also that cold is more to be feared than heat, notwithstanding the prejudice to the contrary. Still, however, in defence of our traditional views on the subject, we may say this much,—that a temperate or even chilly climate conduces in a general way to the vigour of the population, and thus we find that Scotland is healthier, on the whole, than England; but when there comes, as there is sure to come, a little extreme, it is so much more likely with us to take the form of cold that cold does more mischief than heat. Our greatest heats, in fact, are really very supportable; but our cold is exceedingly trying. We do not live in a latitude where we have much to dread from summers; but our weak points are easily found out by such a winter as we have just passed through.

Art. 6.—*On Consanguineous Marriages.*

(*American Med. Times*, March 23, 1861.)

A committee of the New York Sanitary Association has for some time been engaged in an investigation of the physical and moral influence of the intermarriage of blood relations; and judging from the character of their report, read at a recent meeting of the association, it may be hoped that the public mind will soon be aroused to the grave considerations connected with this vitally important subject. Prof. Morris, the chairman of that committee, has long enjoyed peculiar opportunities for the practical study of certain physiological questions connected with this subject, as illustrated in the Deaf Mute Institution at Fanwood, where it is found that a very large proportion of the applicants are the offspring of blood relations. His personal investigations are entirely corroborative of the deductions and statistics of Dr. Bemiss, of Louisville, as contained in that gentleman's report to the American Medical Association in 1858.

Prof. Morris states that there were in the institution at Fanwood, at the close of the last year, 303 pupils, and that 44, or *fourteen and a half per cent.* of these, were the offspring of consanguineous marriages. The latter class of children were from thirty-seven families, in which there had been 165 births. A large proportion of the whole number died young, and many besides the deaf mutes were ascertained to be defective. It is also stated that seventy-five deaf-mute pupils had been received at Fanwood from thirty-six families.

Now it appears from Dr. Bemiss's statistics that the proportion of deaf mutes among the offspring of consanguineous marriages is not half as large as that of the idiotic in such families;—a calamity more deplorable than deaf-dumbness. In addition to this we learn from the same statistics, that the number of cases of congenital blindness in the same families nearly equalled the number of mutes, while scrofulous and other deformities make up an unsightly aggregate of congenitally defective individuals, amounting to nearly *twenty-nine per cent.* of all the children in such families. The following summary of these statistics, as presented in Prof. Morris's report, conveys a kind of practical instruction which every family physician should feel it his duty to enforce by professional counsel.

Consanguineous Marriages, and their Fruit.

Class of Relationship.	No. of Families.	No. of Children.	Perfect.	Defective.
1. First Cousins	630	2911	955	1956
2. Second Cousins	120	626	360	266
3. Third Cousins	13	71	42	29
4. Double Cousins	27	154	21	133
5. Cousins, the offspring of Cousins	61	187	64	123
6. Uncle and Aunt, Nephew and Niece	12	53	10	43
7. Incestuous	10 cases	31	1	30
Total	863+10	4013	1453	2580

We need not comment upon such statistics, though these figures convey but an imperfect idea of the inevitable physical evils that result from the marriage of near blood relations. Careful observation and inquiry will not fail to convince any physician that no small proportion of the erratic and perverted temperaments both of the body and the mind which we so often meet with, are associated with the intermarriage of kindred. The Asylum for Inebriates will eventually furnish us with statistics that may more effectually warn against intermarriage than do the above statistics of deaf-dumbness and other defects of the physical organism.

Physicians and philanthropists of every class will do good service for human welfare by forwarding to Prof. O. W. Morris, or the Secretary of the New York Sanitary Association, any facts that may come to their knowledge respecting the defective offspring of consanguineous marriages. Instances like the following are continually brought to notice in the public prints:

"There is in this city, says the *Schenectady Star*, a very estimable married couple, who have had eleven children, six of whom were born blind; the youngest is blind, and only a few weeks old. When of sufficient age, they are sent to the Asylum for the Blind, in New York. They are said to be possessed of fine talents. We understand that their parents are cousins. There is no defect in the eyes of either parent."

ART. 7.—*On the communication of Syphilis by Vaccination.* By M. VIENNOIS, of Lyons.

(*Gaz. Méd. de Paris*, Jan. 26, 1861.)

The conclusions to which M. Viennois arrives in this paper are these:

1. Syphilis has in many instances been observed to follow vaccination, ever since the introduction of that operation, and by authors worthy of credit, French, English, German, Italian, &c.

2. When a syphilitic subject is vaccinated, in whom the disease is in a latent state, syphilitic symptoms may be developed by the vaccine influence; these symptoms often consist in general eruptions of a papular, vesicular, or pustular character, but a chancre never forms at the seat of the vaccinal puncture.

3. On the contrary, if a healthy subject be vaccinated with vaccine virus taken from a syphilitic subject, and the lancet be charged at the same time with a little blood, as well as vaccine matter, the two diseases may be conveyed by the same puncture—the vaccine with the vaccine matter, and syphilis with the syphilitic blood.

4. In these cases, of which a number are on record, vaccination is first developed because its period of incubation is shortest, and its evolution less rapid than that of syphilis. The latter appears subsequently, and manifests itself by its characteristic lesion at the inoculated spot.

5. The initial lesion, then, by which syphilis, following the vaccinal pustule, manifests itself, is an indurated ulcer, with adenitis; in a

word, all the phenomena of syphilitic chancre. The law announced by M. Rollet, that syphilis always commences by a chancre, even when it results from secondary symptoms, or even from syphilitic blood, is thus fully confirmed.

6. After the primary chancre is developed at the inoculated spot, and in the usual period, secondary syphilis occurs, and runs the usual course, as if transmitted in any other way.

7. When the mixture of virus does not take place accidentally, but is effected intentionally (as practised by MM. Spirino and Daumés, by mixing the vaccine matter with the pus of chancre), the result is the same; one virus does not destroy the other, but each runs its separate course.

8. The vaccine matter thus acts as a simple vehicle for the virus contained in the syphilitic blood, which it divides and dilutes, as a drop of water would do, without at all modifying its properties or its effects.

9. It is important, then, never to take the vaccine virus from a suspected person, or from an infant whose parents are unknown, before the age at which hereditary syphilis usually manifests itself.

10. If circumstances make this last necessary, great care should be taken to collect only the vaccine matter, free from blood or any other syphilitic humour.

11. In no case should a healthy subject be vaccinated with matter taken from a syphilitic subject, for, in spite of all precautions, there can be no certainty as to the purity of the vaccine matter.

12. These precautions are the more important, because, with the matter from one syphilitic subject a number of persons may be vaccinated, and syphilis conveyed to nearly all (as seen by Ceriale, of Cremona).

13. It is sufficient to point out these precautions, to avoid new evils, and to remove the cavils of the enemies of vaccination; for, in these cases, the propagation of syphilis is not the fault of vaccination, but of the vaccinator.

Art. 8.—*On Arsenic-eating.*

By (1) Dr. H. E. Roscoe and (2) Another.

(1. *Dublin Hospital Gazette*, Dec., 1860.)
(2. *Pharmaceutical Journal*, Nov., 1860.)

1. Through the kindness of Professor Pebal, of Lamberg, Dr. Roscoe has procured letters from seventeen medical men of Styria, written to the government medical inspector at Grätz, concerning the alleged practice of arsenic-eating in Styria. All the letters agree as to the prevalence of a belief in such a habit; many of the writers had no personal experience of such cases, some reported instances which had been related to them by persons whom they deemed trustworthy, and a few give reports of cases which have been actually observed by them. Dr. Roscoe also examines the question as to whether it was genuine arsenious acid which these people used, and says that he has received six grains of a white substa- rofessor Gottlieb in Grätz, ac-

companied by a certificate from the district judge of Knittenfield, in Styria, stating that the substance was brought to him by a peasant woman, who told him she had seen her farm-servant eating it, and that she gave it up to justice to put a stop to so evil a practice. A chemical analysis shows it to be pure arsenious acid. The following are some of the results as to arsenic-eating, extracted from the letters. Dr. Schäfer records the case of a man thirty years of age, and in robust health, who ate on February 22d, 1860, a piece of arsenious acid, weighing four and a half grains, and on the 23d, a piece weighing five and a half grains; his urine was carefully examined, and found to contain arsenic; he informed the doctor that he was in the habit of taking a similar quantity three or four times every week. Dr. Holler, of Hartberg, says, that he and other persons named in his report, guarantee that they are together acquainted with forty persons who eat arsenic, and Dr. Forcher, of Grätz, gives a list of eleven persons in that locality who indulge in the practice.

2. The second fact, if fact it be, brings us nearer home. It is copied from the 'Westmoreland Gazette,' into the 'Pharmaceutical Journal,' under the heading—*A Village of Arsenic-eaters.* "A stream called Whitbeck, rising in the Blackcombe Mountains, in West Cumberland, contains arsenic in determinable quantity. The arsenic is most probably derived from veins of arsenical cobalt ore, through which it percolates; for a few yards above the source of the beck there is the entrance of a mine which is very rich in arsenical ore. The arsenical water is habitually used for every purpose by the inhabitants of the little village of Whitbeck, and with beneficial results so apparent that one might be justified in paradoxically characterising it as a very wholesome poison, the deadly elements in dilution being productive of the most sanitary effects! Ducks will not live if confined to the Whitbeck, and while trout abound in all the neighbouring rivulets, no fins are ever found in the arsenicated stream. But its use by the villagers does not give rise to any symptoms of arsenical poisoning, but rather to the effects which are observed in Styria among the arsenic-eaters there. When the railway was being carried past Whitbeck the first use of the water produced the usual marked effects on the throats both of the men and horses employed on the works. The soreness of mouth from which they at first suffered, soon, however, disappeared, and the horses experienced that sleekness of coat which is one of the effects produced by the administration of minute but repeated doses of arsenic. It is a question how far the rosy looks of the Whitbeck children, and the old age which a large proportion of the inhabitants of the village attain, are to be attributed to the arsenic present in the water."

ART. 9.—*Instructions respecting Edible and Poisonous Fungi.* By the Board of Health for the French Army.

(*Journ. de Pharm. et de Chimie*, Nov., 1860; and *Pharmaceutical Journ.*, Jan., 1861.)

These instructions owe their origin to an unfortunate accident, in which five officers of the garrison at Corte lost their lives from eating

poisonous mushrooms. They will be of great service in France, where mushrooms form a very important article of diet. They may be of service in this country, for there is reason to believe that there is a growing fondness for a food which is at once agreeable and nourishing.

1. *Distinctive characters of Edible and Poisonous Fungi.*—Some general characters will enable us in most cases to distinguish edible from poisonous fungi. Thus, edible fungi grow usually in elevated and airy places, in waste ground; whilst the dangerous species are found in woods and in dark damp places. The edible species have a compact, brittle flesh; while those with a soft and watery flesh should always be rejected.

Wholesome fungi have an agreeable odour, although this character is also found in some injurious species. A powerful and disagreeable odour is the certain indication of noxious qualities.

We ought at once to reject fungi which secrete a milky juice, and those which present an acrid, astringent, bitter, acid, or salt taste.

We should suspect fungi which have a bright tint, red, green, or blue, of which the gills are coloured brown or blue. The flesh of the edible species is in general white; nevertheless, a beautiful red fungus, the *orange agaric*, is considered as the finest and most delicate species. Wholesome fungi do not change colour by contact with the air after being cut; those of which the flesh then acquires a brown, green, or blue tint, are poisonous. We ought to regard as dangerous those which insects will not touch.

It is proper to abstain from fungi, whatever may be their apparent qualities, when they have attained their full development; when they exhibit any signs of change; when even they have been collected more than twenty-four hours—the poisonous properties being capable of development when the fungus grows old or dries up.

We thus see that the negative characters have more value than the positive ones; and in rigorously applying the rules which we have now made known, we should undoubtedly throw aside some edible species, an error which is not detrimental, but we should be certain to reject all those species which could act injuriously.

It is important to be cautioned against the widely-spread notion, that it is easy to distinguish wholesome from noxious fungi, by submitting them to such tests as the following:

If we apply a silver piece or plate upon a poisonous fungus, it is blackened; in cooking them with white onions these will blacken, if the fungus is of a poisonous nature.

These tests have no value, and the absence of the above indications proves nothing in favour of the good quality of fungi.

In *résumé*, we see that science does not afford us any certain character which absolutely establishes a clear line of distinction between edible fungi and those which are poisonous to a greater or lesser degree. It is better for us to abstain altogether from them, when there exists the slightest doubt of their quality.

2. *Preparation of Fungi.*— When we are about to use fungi of which there is the slightest doubt as to their quality, it is important before their preparation to wash them thoroughly with water acidulated with

vinegar. For that purpose they should be cut into slices, and left to macerate for an hour in the vinegar and water, composed of a litre of the latter to three spoonfuls of the former. They should be afterwards washed with boiling water, and then cooked. The result of experience is, that the most dangerous fungi lose their poisonous properties when they have been previously treated with vinegar and water. But it is difficult to determine the moment when the poisonous principle is thus carried away.

3. *Symptoms of Poisoning by Fungi.*—The symptoms indicating this poisoning vary according to the species of fungi which have been taken, the quantity consumed, and their mode of preparation. Their action is manifested generally by vertigo, nausea, vomiting, gastralgic and intestinal pains, which very soon become continuous, and assume a great intensity. There is much thirst. Blackish, mucous, and bloody stools, accompanied by tenesmus, are frequently added to these first symptoms. We observe commonly cold perspirations, partial or general convulsions, and coldness of the extremities. The pulse gradually becomes weakened. It is followed sometimes by delirium, either alone or alternating with coma; at other times the intellect remains perfectly clear. Strength decreases, the cheeks become sunken, the stomach retracted, the body assumes at times a bluish hue, and death ordinarily takes place at the end of two or three days.

The series of these grave accidents are not developed till seven, eight, or ten hours after the repast, when the process of digestion is finished, and the poison has been carried into the circulation. It is important, then, when we observe vomiting of a suspicious nature, to inform one's self not only of the food taken at the last repast, but also of that at the one which preceded it.

4. *Treatment of Poisoning by Fungi.*—The first indication to fulfil, at whatever period one is called, is, to assist the evacuation of the fungi by the aid of an emetic and purgative administered at the same time. For this purpose dissolve in half a *litre* of hot water twenty-five *centigrammes* of the emetic, and twenty *grammes* of sulphate of soda or magnesia; then administer this solution in lukewarm portions to the patient, and tickle the back of the throat with the finger or with the barbs of a feather.

When it is suspected that a portion of the poisonous principle has arrived in the intestines, it is desirable to assist the action of the above medicines by the administration of purgative injections.

Experience has demonstrated how important it is to continue the use of these remedies for a long time, even when we believe the digestive organs to be entirely cleared of the poison.

Tannin dissolved in milk and water is recommended at all periods of the poisoning concurrently with the emetics, but especially after the employment of them has ceased. We can replace milk by white of eggs beaten up and mixed with emollient drink or even with water.

After the complete expulsion of the poison, it is expedient to employ mucilaginous demulcent medicines, ether draughts, emollient fomentations, baths, and generally all means should be adopted to ease the pain and subdue the inflammation.

External revulsives, such as mustard poultices, stimulating embro-

cations upon the members and trunk, &c., are means which it is necessary not to neglect whilst the reaction is incomplete, and they should be continued energetically.

(B) ACUTE DISEASES.

ART. 10.—*A pathognomonic sign of Scarlatina.* By Mr. BOUCHUT.

(*Journ. of Pract. Med. and Surgery*, Dec., 1860.)

For some years past Mr. Bouchut has been in the habit of pointing out in his wards a curious sign which assists in the discrimination of scarlatina from measles, erythema, erysipelas, &c. It consists in a vascular phenomenon, proportionate in intensity to the extreme contractibility of the capillaries; we refer to the enduring *white stripe* produced at will by drawing the back of the nail over the part of the skin in which the eruption exists. Pressure with the nail, or any other hard substance, upon the exanthematous surface produces a white streak, which lasts one or two minutes, and sometimes more. Figures may thus be traced upon the skin, the lines of which are conspicuous from their whiteness. With a blunt probe or pen-holder the diagnosis of the disease may be distinctly inscribed on the integument, and after a minute or two the word *scarlatina* disappears, when the uniform tinge of the eruption again invades the written surface.*

This phenomenon is observable in scarlatina only. The scarlet hue of measles is not uniform, the eruption consisting of mottled patches, with very slight elevations separated by interstices of healthy skin. In measles the procedure we have described would produce an alternately red and white streak, enduring a much shorter time than in scarlatina. In erysipelas, in the redness induced by a mustard poultice, in solar erythema, the white line we allude to is not visible; and without attributing to this sign an undue degree of importance, it may be said to supply one more element in the determination of the characters of the eruption of scarlatina.

Among the young patients in whom this symptom was noted this year, was one in whom scarlatina occasioned a delirium similar to that of meningitis, and who recovered, without any other prescription than mixtures with two ounces of syrup of mulberry. In this case pressure with the finger left a distinct and lasting white line, especially on the second day of the eruption. The instances which place the fact beyond question may now be numbered by hundreds, and the phenomenon invariably appears when the eruption is complete. It is, moreover, not a little singular that when the exanthema has faded, and the skin has resumed its natural rosy hue, white lines may still be traced by friction with the finger, and last longer than on those parts of the skin to which the eruption did not extend.

Mr. Bouchut has sought for the cause of this phenomenon. How is it that in a cutaneous eruption, consequent upon universal capillary congestion, sudden and lasting discoloration can be induced by fric-

* This sign is described by Borsieri, who does not, however, lay so much stress on its pathognomonic value.

tion? He considers this to be due to a considerable increase of the contractile power of the capillaries, proportionate to the intensity of the disease, the regularity of the eruption, and the amount of vital power. The capillaries contract, and expel their contents, hence the *white stripe of scarlatina*. This excessive tonic contractility of the blood-vessels is further remarkable, inasmuch as it is peculiar to this disease; once brought into play by pressure, the vascular contraction seems to last one or two minutes, a circumstance which does not occur in any other morbid condition.

ART. 11.—*On Scarlet Fever.* By Dr. B. W. RICHARDSON.

(*Report of the London Medical Society. British Medical Journal*, March 30, 1861.)

The points which Dr. Richardson discusses in this paper are—

1. The reasons why season influences the spread of scarlet fever.
2. The cause of the difference in the types of the disease.
3. The connection of scarlet fever with acute rheumatic fever.
4. The chemical pathology of scarlet fever.
5. The poison of scarlet fever, in relation to its propagation and mode of action.

In considering the first of these points, the author notices the effects of temperature, barometrical pressure, amount of rain, rate of atmospheric movement, and the electrical condition of the air. Having gone minutely into these states, he concludes that the inquiry shows but few facts of value bearing on the effects of special atmospheric changes on scarlet fever. It is worthy of remark, that during a period of eighty-four days, when, in one locality, there was a weekly mortality of sixteen, there were fifty-seven days of positive electricity; while in fifty days, during which the mortality was at the rate of forty-one per week, there were thirty-two days in which there was no electrical manifestation. It might be inferred, hereupon, that the absence of electrical manifestation was at least coincident with a high mortality; and, on the contrary, that the presence of positive electricity was coincident with a low mortality. But when we see again a week of extreme mortality (188), with two days of positive electricity, and a week of extreme low mortality (8), during which electricity was absent on five days, we can but accept the facts which seem to have an affirmative meaning in the light of coincidences, not as cause and effect. Yet it may be, that in the future some relationship between the presence of electricity and a low mortality from this disease will be traced; for it is possible that, while electricity in no way interferes with the spread of the contagion of scarlet fever, it produces modification in the effects of the poison on the animal organism.

But, if there be only this one finger pointing affirmatively towards the relationship of meteorological conditions and scarlet fever, there is a large amount of negative evidence supplied in the statistics given. We see, for example, that, with equal mortality, the most opposite conditions of temperature may be presented; but the most interesting observation is that in reference to the movement of the air. Assuming that the disorder is propagated by means of a volatile poison, it is

obvious that such poison is limited in its range of action, or, at all events, that it is not influenced by the mechanical vibrations of the atmospheric sea. In a dead calm the mortality may, in one week, be sixteen; and, in another week, with a current of air passing over the infected spot at the rate of 207 miles per day, the mortality shall be the same; while, again, with a week of extraordinary high mortality (188), a current of air may be sweeping over the home of the disease at the rate of 1010 miles.

On the cause of the difference of type in scarlet fever, Dr. Richardson endeavours, by excluding various possible causes, to arrive at the actual cause. His results in this direction are summed up as follows:

"If, then, we admit, and we are bound to admit, that the variety of type of scarlet fever is not dependent on differences of poison, nor on meteorological condition, locality, physical condition of the patient at the time of infection, age, nor hereditary taint, where shall we look for an explanation of the singular phenomenon, that of two children attacked at the same time, the one may be comparatively well at the period when the other lies dead, each event encircled in the period of a few days? The question is one of the most profound and important in the field of medical inquiry. At this stage of our knowledge, we must leave it with but one supposition—that there is, in the organism itself, a directing cause, which modifies the violence of the poison, or intensifies its action."

In the section on the connection between scarlet and rheumatic fevers, the author not only gives facts from his own observation, but quotes from others who had seen the same. Analogy is also appealed to as to the relation of this complicate affection and the epidemic called Dengue in Southern America.

In treating on the chemical pathology of scarlet fever, Dr. Richardson classes the disease as belonging essentially to the inflammatory group of diseases. In this respect he differs from Franz Simon, who has stated that the disorder belonged to the same class as typhus and typhoid fever; the blood presenting evidence of relative deficiency of fibrine, on comparison of the fibrine with the blood-corpuscles—*hypinosis*. This view of Simon, resting as it does on four analyses by Andral and Gavarret, was not only incomplete, but incorrect.

Under the last head, the nature and propagation of the poison of scarlet fever, the author dwells first on the physical character of the poison, and urges that the poison is not a gas nor volatile, but a substantive solid thing. He next urges that the poison is thrown off by the lungs or skin, probably with epithelium, and that the poison introduced into the body of the healthy subject, by interfering with the natural zymotic process going on in the body, leads to formation of a lower product of the fermentative process than carbonic acid, and that the new product, an oxyacid, carried over by the systemic blood, is the cause of all the acute symptoms. This secondary poison would necessarily be detected in the excretions of patients.

CHRONIC DISEASES.

ART. 12.—*On the treatment of Intermittent Fevers by large doses of Arsenic.* By Mr. CHAPPLE, Assistant-Surgeon in the Royal Artillery, Poona.

(*Medical Times and Gazette*, March 2, 1861.)

The patients treated in this manner were men belonging to the battery to which Mr. Chapple was attached as surgeon: the scene of the treatment was Poona. Before arriving at Poona the battery had been at Baroda, a most unhealthy station, where, in twelve months, out of an average of 200 men, there were 77 cases of fever in hospital, and 70 cases of sun-stroke: and at the time the treatment was commenced the men were still very unhealthy, though improving in health every day. These facts are of importance in estimating the real influence of the arsenic, but it may be supposed that there was a spontaneous tendency to recovery in some of the cases in which recovery was brought about.

It will be at once perceived, by a reference to the table, that the proportion of successful cases is increased with the increase of the dose. With ♏xx doses 26 cases were successful out of a total of 53 treated, and with ʒss and ♏xxxx doses 59 were successful out of 87 treated. With the increased doses there were 28 unsuccessful cases; 8 cases not benefited by the arsenic, and 20 cases in which it was omitted.

"I have never had to contend with intestinal derangement from the exhibition of large doses. I at first gave the liquor arsenicalis in cold water, but when it disagreed with the stomach, I added ♏v or ♏x of Tinct. Opii to each dose; and as that was no improvement, I gave it in cold infusion of chirayta, but without better effect. It will be seen that 28 out of 87 total treated with ʒss or ♏xxxx doses, were unsuccessful. Now, of these, 20 were cases in which arsenic was omitted, and 8 were decided failures. Other medical officers in these cases might have persevered in the arsenic, but (it will be seen that six got only ʒjss each, and two ʒiij each) it would serve no purpose to enter into the reason I had for discontinuing the arsenic in these cases, if either predisposition to gastric irritation, or the disposition of the fever influencing the tolerance of arsenic, be allowed to have only 8 failures out of 87 treated, certainly most encouraging results. In drawing such favorable conclusions, I am not advocating the use of arsenic, but this Report would not only be incomplete, but useless, if I did not lay open every circumstance which would influence the success or failure of arsenical treatment. That the 'tasteless ague drop,' as a remedy for the disease which its name implies, is of ancier date, but long fallen into disuse, every one knows, but the credit of i revival in large doses is due, I believe, to Dr. Turner, of the Bomb Horse Artillery. It may seem strange that 70 out of 123 cases shown in the first line) were considered inapplicable to treatmen ♏xx doses of arsenic, whilst only 10 out of 97 were considered plicable to treatment by larger doses. This I can explain b

Table showing the result of large Doses of Arsenic in Cases of Intermittent Fever.

Total treated	Modes of Administration and Dose.	Successful Cases, with amount of Liq. Arsenicalis exhibited before Cure.				Liq. Arsenicalis omitted on account of nausea or vomiting, with amount producing the same.				Unsuccessful Cases, with amount of Liq. Arsenicalis exhibited.				Proportion per cent. of Successful Cases to Total treated with Arsenic.	Proportion per cent. of Cases of Nausea or Vomiting to Total treated with Arsenic.	Proportion per cent. of Unsuccessful Cases to Total treated.	Amount of Quinine effecting a Cure when Arsenic had failed, was omitted.				Cases being considered inapplicable to treatment by Arsenic, treated by Quinine, with amount effecting Cure.			
		℥j.	℥ij.		Total.	♏xx.	♏xxxx.		Total.	℥j.	℥ij.		Total.				Grs. viij.	Grs. xvj.	Grs. xxiv.	Total.	Grs. viij.	Grs. xvj.	Grs. xxiv.	Total.
220	Liq. potassæ arsenitis, gtt. xx every hour or second hour for three doses	24	2	. .	26	1	2	. .	3	22	2	. .	24	49	5	50	5	14	8	27	20	35	15	70
	Liq. arsenicalis in ℥ss and ℥ij doses, repeated every second hour for three doses . .	℥jss. 36	℥iij. 22	℥v. 1	59	℥ss. 7	℥j. 7	℥jss. 6	20	℥iss. 6	℥iij. 2	. .	8	66	22	33	12	16	. .	28	6	4	. .	10
	Total . . .	60	24	1	85	8	9	6	23	28	4	. .	32	60	16	39	17	30	8	55	26	39	15	80

fact, that every re-admission in the one month, if previously treated with arsenic, was treated by quinine.

"That I at first adopted the arsenical treatment with much reluctance I confess; the smallness of the dose with which I commenced, and the number of cases considered inapplicable, will prove that I did not, without a trial, place much faith in the anti-periodic virtues of arsenic. On the contrary, I was loath to abandon quinine; I had every reason to be satisfied with it, I had abundant proofs of the powers which it possesses over fever. I do not for a moment imagine that arsenic will ever supersede quinine in intermittent fever, neither do I attempt to prove the equality of arsenic and quinine, because in many cases the former medicine is not admissible, but I have never met a case in which I could object to the latter; but when the fever is uncomplicated, the attack well marked, and the medicine administered in sufficient doses, the arsenic will generally prove as efficient an anti-periodic as quinine. There always must be failures with arsenic, because cases of intermittent fever will often be met with in which paroxysms recur for several days, these cases will resist quinine as well as arsenic; but if we commence the treatment, and the attacks return, we cannot continue the exhibition of large doses for more than three days, and in the majority of cases it is by no means advisable to continue it beyond the second day. We therefore must abandon the arsenic and fall back on quinine; for such reasons arsenic can never supersede quinine, but in many cases it can be used with equal advantage."

Art. 13.—*On the treatment of Malarious Fevers in Ceylon.* By Dr. Ward, of the Ceylon Mission.

(*American Medical Times*, Sept. 15, 1860.)

In the report of a recent meeting of the New York Medical Society is this passage:

"Dr. Ward, of the Ceylon Mission, by invitation, next referred to the manner in which he treated the malarious fevers in Ceylon. At the commencement of the cold stage, from half a drachm to a drachm of spirits of turpentine was given, with a sufficient quantity of castor-oil to act as a cathartic. Experience had taught him to rely upon this plan of treatment in preference to all others. The remedy was repeated every succeeding cold stage, and he had frequently found that no other treatment was required."

Art. 14.—*Scurvy in the Army of the United States.*

(*American Medical Times*, March 2, 1861.)

A couple of years ago the following general order was issued by the Adjutant-General of the United States army:

GENERAL ORDERS, No. 3. WAR DEPARTMENT,
ADJUTANT GENERAL'S OFFICE,
WASHINGTON; *March* 4, 1859.

The following regulations have been received from the War Department, and are published for the information and government of all concerned:

1st. Purchases by the Subsistence Department of "Pickles," "Sour Krout," "Dried Fruits," and "Fresh Vegetables," unless for the sick in hospital, are prohibited for the future.

2d. Two "Issues" per week of "Desiccated Vegetables" may be made *in lieu* of "Beans" or "Rice."

3d. When "Fresh Beef" can be procured at 6¼ cents, or less, per pound, net weight, it will be issued to the troops five times per week.

BY ORDER OF THE SECRETARY OF WAR.

In the "Medical Statistics of the United States Army," recently published, 2803 cases of scurvy are reported as occurring in an army of an average strength of less than 14,000 men, during the five years ending the 31st of December, 1859. In the State prison at Ting-Sing, New York, with an average force of 1000 convicts, there have occurred fewer than fifty cases of scurvy during the last five years. The editor of the American 'Medical Times,' in an able leading article, puts these facts in contrast, and connects the greater prevalence of scurvy among the soldiers to the absence of fresh vegetable food in sufficient quantity, and condemns the unwise economy which led to the general order above quoted in very plain terms.

ART. 15.—*On Gout and its treatment.*

By M. TROUSSEAU, Physician to the Hôtel Dieu, in Paris.

(*Journ. of Pract. Med. and Surg.*, April, 1861.)

M. Trousseau holds the chemical theories of gout somewhat cheap, and he has nothing to offer in their stead. For the present, indeed, he defines gout to be a specific disorder of an entirely unknown nature. In the matter of treatment he has more to say, and what he says is of very considerable interest.

M. Trousseau never institutes any treatment for the first fit of acute gout, because he considers it unsafe to do so, and because he has always found that after the attack had worn itself out in the space of eight or ten days, the patient arose from his couch in a much more satisfactory state of health than before the invasion of the disease. M. Trousseau therefore resolutely declines using any abortive remedy whatever for a first fit of acute gout, which he even views as a relatively fortunate occurrence, and one to be wished for, in the case of a person afflicted with the atonic form of the complaint. But in the instance of acute gout recurring every three or four months in a series of paroxysms, he acknowledges that if he cannot persuade the patient to bear the pain, and if his refusal to interfere afflicts and discourages the sufferer, he determines upon adopting some form of medication, were it only to rescue one more victim from the hands of quacks.

In youth, the system is vigorous, and readily neutralizes morbid influences. It is not so when the constitution has suffered the wear and tear of years, and interference with the external manifestations of disease should then be cautiously avoided. Hence in the case of aged and gouty persons, M. Trousseau remains inactive; and in younger men, when the sufferings are intense, he ventures upon the exhibition of medicines calculated to allay them.

In atonic gout something may be done.

As to visceral gout, something should always be attempted, for pathology does not supply us with any more serious disease, and the practitioner must deem himself happy who succeeds in changing it into articular gout.

Of all the drugs recommended for gout, colchicum is that which effects the most unquestionable cures. The combination which M. Trousseau conceives to be the most efficient is that of sulphate of quinine, colchicum and digitalis, proposed by M. Becquerel in the following proportions:

Quinæ sulphatis, 22 grs.;
Extr. semin. colchici, 8 grs.;
Extr. digitalis, 4 grs.

M. *Divide in pilulas decem.*

Two or three of these pills should be exhibited in the course of the twenty-four hours for two, three, or four successive days. M. Trousseau has prescribed these pills himself, and witnessed their exhibition by others, with sometimes wonderful success. He has found the excruciating pain of a genuine acute paroxysm yield in seven or eight hours, and the attack itself subside in two or three days. These pills are prescribed in the incipient stage of anomalous gout.

The tincture of colchicum seeds, the favorite nostrum of quacks, is exhibited in doses of five, six, eight, and ten drops twice, thrice, and four times daily, for several days in succession. The extract should not at first be given in doses of more than three or four grains in the twenty-four hours, which may be increased gradually to five, six, and eight grains, a quantity which must not be exceeded. As a very small amount of these medicines is occasionally sufficient, it is unnecessary to prescribe larger doses. Their action is so rapid, that at Contrexeville a patient, in an acute fit of the gout, laid a wager with his medical attendant that he would dance the same evening at the public ball: he took very small doses of colchicum, and won his bet. But the warmest advocates of this drug, if possessed of any medical tact, carefully refrain from prescribing it for the first three or four days of the attack, after which the original intensity of the pain has in some degree subsided. It is also important to be aware of the fact that colchicum has an especially active influence upon recent gout. Exhibited in the course of a first paroxysm, it will sometimes utterly extinguish the pain; but in subsequent attacks its action will not be so favorable, and a larger dose will become necessary.

With regard to the secondary effects of colchicum, it is a known fact that after its exhibition the attacks of gout become rather more frequent. Instead of two, the patient will have three or four fits in

the course of the year, unless precautions are adopted which we shal describe, for the purpose of obviating or attenuating the ill effects o the medicine, after taking which most patients are so imprudent a promptly to return to the injurious habits which occasioned and tend to perpetuate the disease.

As to other medications, a certain affinity having already been descried during the last century between gravel and gout, alkalies were prescribed for the latter, such as the carbonates and bicarbonates of soda and potash, the carbonate of ammonia, and the waters of Carlsbad. Even now, persons afflicted with gout are sent to the spas of Carlsbad, and subsequently to Vichy, Vals, &c. Now M. Trousseau does not hesitate to declare, in the most emphatic manner, that he is convinced no more dangerous medication can well be conceived than the incautious and hackneyed exhibition of alkaline mineral waters. He would not of course be understood to assert that these springs can never be productive of benefit, and M. Durand Fardel, whose discriminating sagacity is well known, considers these waters as useful, when sparingly prescribed. The patients should be advised to take them each month, or every other month, for a week or ten days, but they must never be permitted thoroughly to saturate their system with the alkali, an act of imprudence which might transmute atonic into visceral gout.

The chief utility of mineral waters in gout is to improve the gastric functions; as alkalies, they are less beneficial, and their action upon the urates is merely peptic. This view is borne out by the fact that the waters of Plombières, Contrexeville, and Pougues, much less alkaline than the others, are far more advantageous when they promote gastric digestion. The same may be said of cinchona bark, of bitters, nux vomica, quassia, &c.

M. Trousseau frequently sends his gouty patients to Weisbad, and to Aix in Savoy; to Weisbad for visceral gout, to Aix for the relief of secondary symptoms, articular gout, fibrous or osseous enlargements, &c. In these cases the waters of Aix are extremely serviceable. Under similar circumstances the water-cure is also advantageous, and M. Fleury has derived much benefit from the method, both as a modifier of the symptoms consequent upon gout, and as a stimulant of the gastric and renal functions. This method of treatment induces a return of appetite, and improving the digestive powers, places the patients in circumstances calculated to prevent a relapse.

In describing the most appropriate treatment for gout, it is impossible to lay too much stress on the question of diet. Gout becomes more promptly visceral in proportion as the appropriate diet and necessary exercise have been neglected. The food of persons exposed to a return of the disease should be in great measure vegetarian; they must, however, be allowed a certain amount of meat, in order to preserve or acquire the muscular strength necessary for exercise. The working man is seldom afflicted with gout, and gouty subjects must therefore assimilate as much as possible their mode of life to that of the operative. In a word, M. Trousseau insists strongly upon active daily exercise, on foot or on horseback, manual labour, and out-of-door life.

ART. 16.—*Some cases of Hydatid Disease.*
By Dr. HABERSHON, Assistant-Physician to Guy's Hospital, &c.

(*Guy's Hospital Reports*, 3d series, vol. vi, 1860.)

Instances of hydatid disease are very numerous, and the cysts are found in almost all parts of the body. Although frequently first detected on the post-mortem table, there are many facts well ascertained in connection with their symptoms, course and termination, which are our guide to prognosis and treatment.

1. If the cysts attain a considerable size, and are near to the surface, we generally find a rounded tumour, dull on percussion, having peculiar elasticity; and, unless from position, exerting pressure on important structures, or from their very large size, they do not produce any distressing symptoms, or interfere in a marked degree with health. The cysts sometimes remain for a great number of years without much enlargement or symptom; a case has been published where a tumour, afterwards proved to be hydatid, existed for twenty years.

2. The hydatids often lose their vitality and cease to increase; degenerative changes take place in the cyst and in its contents; the former becomes thickened, and often has plates of cholesterine, or ossific particles in it; the latter may be converted into pus, or become a pultaceous mass.

3. Spontaneous rupture and recovery sometimes occur; either directly through the skin or into adjoining viscera; as through the bronchial tubes, the intestines, the bile ducts, the bladder, &c.

4. The causes of death are various:

From pressure on adjoining structures, as in Case 3.
From rupture into the pleura, as in Case 1.
From rupture into the lungs and bronchi.
From rupture into the peritoneum. Case 4.
From rupture into the intestine.
From rupture into the bile ducts.
From suppuration of the cyst and pyæmia.
From secondary suppuration, external to the cyst, consequent on its pressure.
From hæmorrhage, as in a case mentioned by Dr. Bright, in which a cyst had opened near the umbilicus, and bleeding took place into the cyst. And a remarkable case recorded in the 'Pathological Transactions,' by Dr. Hillier, in which a cyst extended into the bile ducts, and also into a large hepatic vessel, causing fatal effusion of blood into the stomach and intestines.
From impeded circulation, as where the cyst is connected with the pericardium, and still more so, where the cysts are in the current of the blood itself.

5. Internal remedies do not appear to be productive of very marked beneficial results; although diminution of the size of the cyst has followed the use of iodide of potassium, &c. External

remedies, as iodine, blisters, and electricity, are equally unsatisfactory.

6. Operative measures have been followed by success, but often have imperilled and destroyed the life of the patient.

7. The mode of operation has been various:

By removing the entire cyst, as from the extremities.

By drawing off the contents of the cyst directly, but guarding against entravasation into the abdominal cavity by firm pressure, by strips of plaster and bandages, as adopted by Mr. Hilton in the case under Dr. Rees' care, recorded in the Reports of 1848.

By removing smaller quantities of the fluid repeatedly, so as to diminish the tension of the cyst, but with less liability to the admission of air, as in Mr. Cock's case.

By using an exhausting syringe to withdraw the fluid through a trocar, as recommended by Dr. Budd (according to the plan of Dr. Bowditch, of Boston, in the treatment of empyema), thus destroying the pressure on the hydatids, and leading to their death and absorption. If necessary, the whole contents of the cyst may be removed in a similar manner.

By ensuring peritoneal adhesions by the use of potassa fusa, applied to the most prominent part of the tumour.

By the injection of iodine, as described by M. Leudet, after the method of M. Recamier: 1st, applying caustic potash nearly to perforation, then drawing off the contents of the cyst, and washing it out, and introducing a weak solution of iodine. Various other substances have been used as injections, barley-water, solution of chloride of lime, or of chloride of sodium, &c.

Although the latter plan has been attended with considerable success, the instances of tapping which have been followed by least constitutional disturbance, and the most satisfactory result, have been those in which suppuration has not taken place. As far as we have observed, the method of drawing off small quantities without the admission of air appears most deserving of trial. A measure so fraught with danger, cannot be resorted to without great deliberation; but the improbability of a large hydatid cyst becoming absorbed, and the dangers attending its evacuation through natural channels, would lead us, where the diagnosis is clear, to recommend the plan of cautiously removing a portion of the contents of the cyst, and, if necessary, repeating the operation several times.

CASE 1.—James S—, æt. 31, hydatid in the liver; rupture into the pleura; death.

CASE 2.—Henry B—, æt. 36, hydatid in the liver; contents evacuated by repeated operations; recovery.

CASE 3.—Elizabeth L—, æt. 31, hydatid in the liver; pressure on the vena cava; death.

CASE 4.—Hiram B—, æt. 50, hydatid in the liver; cyst extending into the common bile duct; suppuration; jaundice; peritonitis; death.

CASE 5.—William M—, æt. 29, hydatid disease of the liver, supposed to open into the duodenum; convalescence; subsequent death.

CASE 6.—William A—, æt. 52, death from cancer of the pylorus; hydatid in the cellular tissue of the bladder.

CASE 7.—Mary A. A—, æt. 59, hepatic ascites; hydatid in the liver.

CASE 8.—Theresa P—, æt. 27, diphtheria; cerebro-spinal meningitis; hydatid in the liver.

CASE 9.—Sarah F—, æt. 59, pneumonia; hydatid cyst situated between the stomach and colon.

CASE 10.—Ellen D—, æt. 7, hydatid in the liver.

CASE 11.—Cornelius D—, æt. 9, hydatid in the liver.

CASE 12.—John H—, æt. 35, hydatid in the liver.

CASE 13.—Girl, æt. 16, valvular disease of the heart; hydatid in the pericardium.

ART. 17.—*On Syphilization in Vienna.*

(*Medical Times and Gazette*, April 6, 1861.)

The therapeutical results of syphilization, up to the present time, have been so contradictory, that Professor Sigmund, who has under his care all the syphilitic patients who are received into the General Hospital of this city, has instituted a new series of experiments, in order, if possible, to arrive at a satisfactory solution of this vexed question. The chief results of his researches have been, that the secondary symptoms diminish and sometimes even disappear entirely during the time that the new ulcers are forming; but that relapses generally take place within a few months; so that there is no reason for preferring syphilization to the other modes of treatment which have been hitherto used; but, considering the length of the treatment, and the annoyance and disgust caused by it to the patient and the doctor, it cannot even be thought equal to the other methods of cure. If, in practising syphilization, we extend the inoculation over the space of one or more years, as was lately recommended by a Scotch surgeon; or, if inoculations are as often repeated as relapses occur, as M. Sperino is in the habit of doing, it is obvious that the disappearance of the symptoms is to be ascribed to the judicious diet followed at the same time, and to the natural course of the disease, but not to syphilization.

In the course of his experiments, Professor Sigmund observed that the ulcers cicatrize without the application of special remedies, if they are only carefully attended to. Twenty-four hours after inoculation the formation of a small pustule round the place, where the puncture with the lancet has been made, is observed. On the second day this pustule contains a yellow, turbid liquid, in which the microscope shows the characteristic elements of pus. During the next two days the pustule increases to the size of a pea, and shows a small depression in the middle. Between the fourth and the sixth day the pustule bursts, and pus is evacuated with more or less considerable coagula. The skin and the cellular tissue are destroyed as far as the pustule reaches; the edge of the skin is strongly marked, and the edge and bottom of the ulcer covered with pus, which closely adheres to them. Where the meshes of the cellular tissue contain much fat the ulcers increase in depth; but where this is not the case, they scarcely spread

vertically or horizontally, and the adjoining part of the skin is not undermined, unless the pus is prevented from escaping, and accumulates in consequence. So long as the pustule is in the process of formation there is a trifling inflammation in the neighbourhood, but as soon as it has burst, and the ulcer is developed, this inflammation subsides. During the second week the bottom of the ulcer is raised, red granulations are perceived, which are at first isolated and surrounded by pus, but soon become more numerous, until at last the whole surface of the ulcer is covered by them. During the third week the margin becomes flat, and the formation of epithelium begins, sometimes from one part only, in other instances from all parts simultaneously. In the ordinary course of events these ulcers are cicatrized at the close of the third, or certainly of the fourth week. The cicatrix is at first red, but afterwards it becomes brownish or yellow, and in a few weeks it is either of the same colour as the healthy skin surrounding it, or it is a little lighter and smoother. If patients who had thus been inoculated were some years after again received into Professor Sigmund's ward, scarcely any traces of the numerous cicatrices were left.

The mode of treatment in these cases consisted in frequent cleaning with common water—with syringes, sponges, charpie, &c.—and dressing with charpie or linen; in keeping up the circulation, and not allowing much movement of the parts affected; so that in ulcers on the thigh, walking was prohibited, and in ulcers on the arm the latter was carried in a sling. Besides, the diet was nutritious, and the patients kept very clean. These are the conditions necessary to a successful treatment of the usual syphilitic ulcers, and the partial or total neglect of these is too often the cause of the long duration, the spreading and increasing, as well as of the complications of venereal disease. The ulcers produced by syphilization, only then considerably extended in the skin and the cellular tissue, if they were very close to each other, if they were not well cleaned, if the dressing was tight, if the clothing and position of the affected part impeded circulation, and if the patient suffered from diarrhœa and dysenteria; in such cases even cicatrices, which had been formed some time previously, broke out again. The same circumstances generally prevent the speedy cure of the usual syphilitic ulcers, as those on the genitals of male patients are generally tightly covered by the præputium, so that the pus is not removed, and accumulates under the scurf formed by cauterization. Besides, the dressing often communicates the pus to other tissues, and the edge of the ulcer and the parts surrounding it are excoriated and inflamed by the caustics used. These are a few of the reasons why, in so many cases, even the best medical advice does not succeed in effecting a cure.

In patients suffering from scrophulosis or tuberculosis the ulcers healed rather slowly, the pus adhered longer and more closely to the skin and the cellular tissue. The granulations were formed tardily, and were sometimes again destroyed after having been formed, the cicatrix was softer, and a longer time elapsed before it became quite firm; but if the treatment was as above, the diet good, and the patient did not suffer from diarrhœa, cicatrization was invariably induced

without further trouble. While the ulcers existed, in some cases inflammation of lymphatics, and in others abscesses and furuncles, were observed. Some of these patients had been treated with mercurial ointment and bichloride of mercury; others with iodide of potassium, or mercury and iodine together, before they were syphilized; but these circumstances did not at all affect the formation of pustules and ulcers, which were just the same as in those who had not been treated by either of these remedies. The average term for cicatrization was three weeks, and the longest seven weeks, which is the same as is observed in simple venereal ulcers.

It took very little pus to render inoculation efficient. Shallow punctures proved more efficacious than deep ones, as the latter often produced no results. In the course of syphilization the pustules and ulcers gradually became smaller, until the pustules gave no longer rise to ulcers, and at last, even if inoculation was repeated many times with pus from a fresh chancre on the same place, not even pustules were formed, although the same pus produced large pustules and ulcers in other patients. This state of immunity, however, never lasted longer than a fortnight, and in some patients in whom inoculation on the thigh did not prove successful, pustules and ulcers could be produced on the arms and the chest. In one case this state continued for months, and there was, therefore, never a permanent and general, but only a local and temporary immunity from the venereal poison. Syphilized patients may, therefore, easily be infected afresh; and even in Paris and Turin, where at first the most sanguine expectations of syphilization as a prophylactic remedy were entertained, this hope has now faded.

Professor Sigmund, in most of his cases, inoculated with matter from ulcers where both the edge and the base were soft; and only seldom with pus from ulcers where both edge and base were hard; but the result was always the same, as all ulcers produced by inoculation showed a soft edge and base, and brought about a soft cicatrix. The same may be often observed in the development of the usual syphilitic ulcers, viz., that if patients, already suffering from secondary syphilis, are again infected, they only show ulcers with soft edge and base—a fact which those who accept two different kinds of virus, one of which causes soft, and the other hard ulcers, are not able to render consonant with their views.

It is a striking fact connected with syphilization, that the system generally is not at all affected by it, even if from thirty to fifty ulcers are present. The patients do not suffer from fever, and neither the general health nor any particular function is disturbed by it. On the contrary, almost all of those syphilized, with the exception of two, who suffered respectively from tuberculosis and dysenteria, increased in weight and improved in appearance. This is, most probably, solely due to the nutritious food which was provided and the carefully regulated diet. Professor Sigmund considers it a great mistake to put all patients suffering from secondary syphilis indiscriminately upon a low diet, as is constantly done, as such is only good for certain periods of the disease and exceptional cases. The rule should be to give the

patients so much, and such kinds of food as they are able to digest easily under the circumstances of the treatment.

In most patients the symptoms of secondary syphilis return after a few months, in a lesser number after a year or so. The decrease and disappearance of the secondary symptoms after syphilization began at a period varying from three to eight weeks, just as is the case with secondary syphilis, if it is left undisturbed, and even then only the symptoms affecting the skin and the mucous membranes disappear, while the general intumescence of the lymphatic glands either remained quite unchanged or was only diminished in a trifling degree. Professor Sigmund considers this to be the first essential symptom of the distemper, and also the most positive sign that it still exists. A careful examination of the different cases shows that if this general swelling of the lymphatic glands is absent in patients, who, to all appearance, are syphilitic, the cases are not such of genuine syphilis.

SECT. II.—SPECIAL QUESTIONS IN MEDICINE.

(A) CONCERNING THE NERVOUS SYSTEM.

ART. 18.—*A means of distinguishing between Cerebritis and Fever.* By Dr. WILKS, Assistant-Physician to Guy's Hospital, &c.

(*Guy's Hospital Reports*, 3d series, vol. vi, 1860.)

In a report "On some Diseases of Children," after relating several cases, some of which occurred in adults, Dr. Wilks proceeds:—

"It is highly probable that the substance of the brain is affected throughout in many of these cases, but the inflammation supposed to involve more particularly the surface and ventricles, because the exudations are more appreciable here than in the solid cerebral matter. Some of the above cases show that the symptoms may be little more than fever, drowsiness, and final coma; these indeed being, as Cruveilhier remarks, the only symptoms common to all inflammatory affections of the brain. It is for this reason that so much obscurity exists in the earlier stages of this disease, and that it is so difficult often to distinguish it from fever. The condition of the abdomen is one of great importance in the solution of the question, as we had occasion only lately to remark; for being called to a young girl who was said to have been ill a fortnight with head disease, and who had consequently been leeched and kept low, we found her lying prostrate in bed, in nearly a senseless state, but with a full, tumid abdomen; a very opposite state to the contraction of this part observed in cerebral affections, and associated with a similar contraction of intestine and constipation. We had little doubt that the case was one of fever, and stimulants and support being accordingly given, the patient speedily recovered. It will be observed that in one of the above cases an extreme sensitiveness of the skin is made mention of, and it may often

be observed that with pains in the limbs, and increased sensibility of the surface, there is a general dislike to be disturbed. This fact is made use of by Mr. Stocker, of this hospital, as a help in diagnosis, and illustrates well the means which a man of experience may employ, and which yet can scarcely find a place in a written treatise on disease. We have heard this gentleman constantly remark that, in a questionable case of fever and head disease, the way in which the patient deports himself, in reference to his willingness or repugnance to be touched, aids him in his diagnosis either in favour of fever or brain disease respectively. On the attempt being made to raise the patient's nightdress to examine for eruption, &c., if the case be one of fever the patient assists in drawing up his clothes, whereas if it be one of cerebral disease resistance is made, and, if the patient be a child, also a whining and a coiling up on the side, showing that any movement is annoying. In the case of fever the patient is in too senseless a condition to heed any disturbances of the kind, and, automaton like, in his partial consciousness attempts to do what he sees is required."

ART. 19.—*On Delirium Tremens.*

By Dr. GAIRDNER, Physician to the Royal Infirmary, Edinburgh.

(*Lancet*, May 4, 1861.)

"Were I addicted to changes of nomenclature," (we quote from a clinical lecture) "I should wish for a new and more comprehensive term for this disorder; for though delirium and tremor are both frequent enough symptoms, yet you may have all the essential phenomena of nervous disturbance consequent on the use of intoxicating drinks without tremor, and without well-marked delirium. We may have, in fact, every degree and kind of nervous irritability, and almost every kind of cerebral disorder in turn, due to this cause—from the fidgety, dyspeptic, and prostrate condition, vernacularly called 'the horrors of drink,' to the most exaggerated mania or the most desperate and repeated epileptic attacks.

"The cases now under observation are very characteristic. The first is that of a man (W. N——, aged forty-five) who is already improved since admission. He has been very delirious, but is now comparatively quiet. He addresses me as an old friend, and alludes to many transactions as having passed between us; for my part, I don't remember ever to have seen the man before. His delusions are very decided and insurmountable; they refer chiefly to his business, for he is a publican by occupation, and he fancies he is behind his counter, selling liquors to his customers; nothing can root this idea out of his mind. He had been indulging very freely for some days before admission. Yesterday he was so unsettled as to give a great deal of trouble to the attendants; and though hardly so violent as to be dangerous, he managed to break a window by dashing his hand through the pane, in performing which feat he cut his hand pretty severely. We had him removed, for safety, to one of the padded rooms; though I must tell you that I have a strong objection in general to using these rooms at this season, because we are unable to keep a fire in them,

…ases suffer very much from darkness and cold. … I would treat almost … treated … as … les exercise in the open air; … with … giving rise to great annoyance, … in the way of exercise-ground. … being in the ordinary chamber; on the … quite warm, happy and comfortable, … to walk singly and going back to his prison with … I never left him there therefore without … directions to the attendant to wish him every … that he does not entail guilt. I am told he … taken food freely. Now, bear in mind … danger of maniacal and delirious attacks is ex… patient digests his food the danger is much dimi… appears in great danger of exhaustion; … as to his life. There is a risk, perhaps, that … chronic mania, but I think that in all pro… and get well without any further treatment. … same disease is that of G. S——, aged thirty… has been drinking hard lately, usual at the … at first of pain in the right flank, and a … and a blister. He first began to have … day, and was brought here on the 3d. He … about homes, and sits down in his bed holding … the act of driving his cab. The delirium is not so … the case of the publican, but it is emphatically the same … *good humoured* delirium, bearing largely on the … called by Dr. Watson a *busy* delirium). It … *vanishing* as in these two cases—sometimes quite the … almost always restless and fidgety. Now, let me tell … (and this I hold to be a very important doctrine) … *absolutely require, as a rule, nothing but careful … protection and good food, adapted to the state of* … usually feeble. Very often I give no medicine; … is very prolonged, I sometimes give … the high doses that are often prescribed … cumulative doses, involving the risk of poison… and the excesses that have led to it are of … think of giving stimulants, at all events … patients are much debilitated, and the … continued habits of drinking, and not the im… I sometimes think it right to give a very … whiskey, and I believe they take their food all …

…——, aged thirty-four) is one in which this … requisite, had the disease degenerated into … but it was merely an exaggerated case … not tremor of the hands and tongue, … loss of appetite, melancholic and … derable prostration, and costive … or laxatives and tonics."

In another clinical lecture Dr. Gairdner says, "All the cases of delirium tremens are now getting well. I mention this particularly, as illustrating the doctrine I have delivered to you—viz., that simple treatment, consisting chiefly of good nursing and food, will cure the most of these cases. Since I adopted the plan I mentioned, I believe I have never lost a case that was not complicated with either surgical or medical disorder, such as fractures or other severe injuries, pneumonia, &c. Another remark, however, ought to be made as qualifying this. I do not think that delirium tremens is quite so formidable a disease, on the whole, as it once was. The habits of the population are improved of late years; there are fewer cases altogether, and certainly fewer aggravated cases, such as I used to see a dozen years ago, when, however, I must admit, the usual treatment was such as in many cases to increase the disease. This year there have been fewer cases, I think, up to this date, than I ever saw before at this festive season."

Art. 20.—*A case of Acute Myelitis and Paraplegia.* By Dr. Burrows, Senior Physician to St. Bartholomew's Hospital.

(*Medical Times and Gazette*, March 30, 1861.)

The extreme rarity of acute inflammation of the substance of the spinal cord, and the comparative unfrequency of examinations after death of this portion of the nervous system, renders this case both interesting and instructive. If the man's statement is to be relied upon, he was in his usual health to within forty-eight hours of his admission into the hospital, and yet in that interval of time such serious mischief had taken place in the spinal cord, that the patient had become completely paraplegic as far as the lower half of the body. The loss of muscular power over the lower extremities, of the bladder and rectum, the impairment of sensation in the same parts, together with the absence of symptoms of spinal irritation, and the inability to rouse any reflex movements, would seem to indicate the existence of disorganization of the substance of the cord, even at the time of his admission. The morbid action appears to have been so firmly established that its progress seems to have been almost uninfluenced by the remedies employed; but the changes of structure discovered after death will probably be considered to have justified the employment of these remedies. There is every reason to suppose that the disease was excited by the direct action of cold upon the surface of the body, and the history of other similar cases leads to the conclusion that acute myelitis, or inflammation of the spinal cord and its membranes, is usually induced by exposure to a low temperature.

Case.—John B., a porter, æt. 55, whose occupation was heavy work, was admitted January 16th, 1861, for paraplegia. The history of the case obtained was, that up to the evening of January 14th he was, he considered, in good health, with the exception of a "cold." When walking home after his work he began to feel weakness in his knees, and also a numbness extending upwards from his feet. By the time he got home he was obliged to walk with his back bent forward, and grasping his thighs just above the knee with

his hands. While undressing to get into bed complete paralysis ensued. He then also lost power over his bladder, and the urine dribbled away. For some time he had had difficulty in micturition; he had been a long time in passing it, and the stream was small, but he had passed his water as well as usual on the 14th. He did not remember to have had any injury to the spine.

On admission it was noted that he was a fairly-nourished man; his complexion was sallow. The capillaries of his cheeks injected, but his face was very pale and anxious. The conjunctivæ were suffused and injected; the pupils slightly contracted and sluggish. He laid with his eyes partially closed. He was constantly grinding his teeth. His respiration was laboured and accompanied by moaning; the respiration blowing, with some inflation of the cheeks. He had also occasional cough. His tongue was moist and furred on the dorsum. Pulse 120, of fair volume, and rather sharp beat. Urine free; specific gravity 1016. It contained no albumen and no excess of phosphates. He was not able to pass any urine. It was drawn off by the catheter. There was no stricture and no prostatic enlargement. Bowels very costive. The lower extremities, as regards motion, were completely paralysed. There was no involuntary action of the muscles. The sensation of these parts was impaired, but he was conscious of firm pressure everywhere. There was no impairment of action in the upper extremities. No prominence in any part of the spinal column was detected, and no pain was elicited on percussion. An enema was given and aperients. He was cupped to six ounces. A blister was applied to the back of the neck. Wine six ounces. 1·30.—The paralysis now appeared to have extended upwards, sensation being lost nearly as high as the nipples, and he now seemed to be unable to move the hands, which dropped when raised. They still retained sensation. His pulse was 96, compressible. He seemed half comatose. 6, p.m.—He was more sensible, and talked rationally. The face had lost its extreme pallor. The upper and lower extremities were cold, and his power to grasp by the hands was much impaired. Sensation was found to be impaired to within an inch below the nipple. Pulse 120, very small and compressible. His bowels were freely open. The motions were passed involuntarily.

January 17.—He has had a very bad night, and talked very incoherently. The bowels were moved, the motions still passing involuntarily. The urine was abundant, and was still removed by the catheter. At the time of this note he was laid on his back asleep. The eyelids were half closed, the conjunctivæ suffused, and the pupils contracted; the respiration was deep and low, unaccompanied by stertor. When roused he answered rationally, in low and indistinct tones, very briefly, and soon subsided again into a semi-conscious state. He said that he had no pain in his head. On raising his arms they fell helplessly, and he did not attempt to raise them, but on pinching them his countenance indicated that he felt pain. His skin was warm and dry; pulse 118, easily compressed, and rather sharp in the beat. His tongue was coated by a thick fur. There was no involuntary movement of the limbs, and no reflex movements were excited by pinching. He took wine and beef-tea. 2, p.m.—He was now more unconscious, and there was greater difficulty in rousing him. He had much difficulty in swallowing fluids; they appeared to excite the sensation of choking. His respiration was laboured, the expiration blowing, and he had hiccough. His head was shaved, a blister applied to the scalp, and mercurial ointment was rubbed into the axillæ. Enemata of beef-tea and brandy were given every six hours.

18th. 11·45, a.m. He was now lying supine and quite unconscious, and had been in this state all night. His face was flushed, and his skin dry and hot. There was slight paralysis of the face on the left side; pulse 140, sharp

in beat, compressible. Respiration was slow and deep, 28 per minute, and accompanied by moaning. There was much tenacious mucus at the fauces, which he was quite unable to expectorate. His lips were dry, tongue coated with a white fur, and dry at tips and edges. His face was flushed, the conjunctivæ injected, and the eyes closed. The pupils were partially contracted, and did not act perceptibly by light. He had lost all power of articulation, and was not able to swallow anything, the least quantity of fluid exciting the sensation of choking. He did not show any signs of sensation anywhere except on the face, when, on being touched, the corrugator supercilii muscle contracted. The blister had risen well. The urine and fæces were passed involuntarily. He died at 2 p.m.

Autopsy.—There was considerable minute injection of the smaller vessels of the surface of the brain. On dissection the brain substance was found to be pretty firm, and the white substance stained of a yellow colour, with numerous red spots. The gray matter was very pale. There was very little fluid in the lateral ventricles. The sheath of the cord contained a considerable amount of lightly opalescent fluid, about two ounces. About the level of the upper dorsal vertebræ the cord was found to be markedly softened, and of a light yellow colour. Below this point, also, it was softer than natural. There was no effusion of blood into the sheath. The lungs were congested, and there were firm old pleuritic adhesions. The heart was small, but was otherwise normal. The left kidney was congested and much enlarged. The capsule was readily stripped off, leaving the surface smooth. Here and there were small white pearly deposits, like carcinoma. In the right kidney were a few similar spots. The prostate gland was considerably enlarged, indurated, and the seat of a deposit like hard carcinoma in its external character.

Art. 21.—*On the Treatment of the Paroxysm of Neuralgia.* By Dr. Sieveking, Physician to St. Mary's Hospital.

(*Lancet*, Feb. 2 and 9, 1861.)

"The paroxysm of neuralgia," says Dr. Sieveking in some excellent clinical remarks on neuralgia, "is to be met by various remedies, amongst which opium and its preparations, applied locally or given by the mouth, occupy the first rank. But, however grateful the sufferer may be for the relief they afford, they rarely, if ever, suffice to effect a cure without the aid of other agents of an alterative or roborant kind. The topical application of opium or morphia operates variously, according to the manner in which the application is made. It may be laid on the unbroken surface in conjunction with hot fomentations or poultices; it may be used endermically, the anodyne powder being sprinkled over the cutis, from which the epidermis has been removed; or a solution of morphia may be injected into the cellular tissue by the aid of a small syringe. Dr. Kurzak, of Vienna, was, I believe, the first to employ the subcutaneous or hypodermic method, which was then largely used by Dr. Wood, of Edinburgh, and has now been tested all over the country by numerous practitioners. Whichever method we avail ourselves of, it is scarcely necessary to say that the application should be made at the seat of pain, or as near to it as possible. This holds good equally of veratria, aconite, chloroform, or belladonna, of hot fomentations, turpentine stupes, or of such counter-

irritants, as croton oil, vesicatories, or issues. The external application of tincture of opium with moist heat is often of great use in milder forms of neuralgia, and has stood me in good stead in various cases. It is important that the medical man should himself apply the fomentations in the first instance, as they are often used negligently, and applied tepid instead of hot. The physician's aide-de-camp should be as trustworthy a person as the aide-de-camp of the general, or his orders will be as recklessly carried out as the order that led to the gallant charge at Balaklava.. The medical man should take as little for granted in the sick room as possible, and think nothing that concerns the welfare of his patient beneath his notice. The endermic application of morphia cannot be used where the disease is very paroxysmal, or the attacks of pain very brief; but in protracted cases of neuralgia, as, for instance, in gastrodynia, I have often found it of great value. I order a space of the size of a five-shilling piece to be blistered, the raised epidermis to be removed, and a powder containing a grain of morphia to four grains of white sugar to be sprinkled over the surface. A simple dressing is then applied. Three or four powders may in this way be applied on successive mornings, or at still shorter intervals. There is generally a little smarting pain at the time of the application, but soon after relief usually ensues from the narcotic. * * * * * *

"Although the injection of narcotic substances into the cellular tissue has an undoubted and certain local effect, its action is not limited as the endermic method appears to be. There is evidently a much readier absorption from the areolar tissue than from the denuded cutis, and even than from the stomach; hence it is important that the dose should be carefully graduated, and the effects watched. I have heard, on good authority, of one death which resulted from neglect of the proper caution; and, though I have fortunately not met with dangerous accidents myself, I have seen enough of the power of the remedy to justify an urgent warning that it should not be inconsiderately administered. Within a few minutes after the solution has been thrown under the skin, the patient begins to feel the general effects of the narcotic; there is giddiness, followed by more or less drowsiness, and there may be the retching, sickness, and prostration after a time, which are occasionally the troublesome effects of the administration of opiates by the mouth. According to the idiosyncrasy of the individual, no less than according to the dose administered, these symptoms vary in intensity and duration; but they have appeared to me to occur more frequently than when similar doses are given by the mouth. The general symptoms are sometimes so severe as to prevent the patient from submitting to the injection again, even though there may have been great alleviation of the neuralgia. More frequently, however, this is not the case, and the relief afforded by the injection induces the sufferer even to apply for its repetition. With regard to its local effect, I can speak of it in terms of praise. Applied, as advised by Dr. Wood, at the point of greatest tenderness, which, for instance, in sciatica, is generally at the sciatic notch, the anodyne does not fail to arrest the pain completely for a time, but it generally requires repetition before long. The irritation arising from

quent injections in the same locality may be avoided by varying the site of injection, and by using very concentrated solutions of morphia. If a solution of four grains to the drachm be used, seven minims and a half (equivalent to half a grain) would be the quantity suitable for an adult. The syringe should have a fine perforated nozzle, which supersedes the necessity of a canula and troicart, and permits of the injection being made with the smallest possible opening. I have not myself employed other solutions than those of morphia for hypodermic treatment, and do not understand how the method can be of very general use for the introduction of remedial agents into the system, as the majority would induce so great an amount of local irritation as to prevent their beneficial operation. This objection would apply strongly to such substances as quinine, which it was proposed in America to introduce in large doses subcutaneously. While I regard the hypodermic employment of morphia as a valuable addition to our therapeutic armamentarium, I do not think it ought to be indiscriminately used either for the purpose of allaying pain or of procuring sleep. As a local anodyne, I consider the endermic application of morphia in the majority of instances preferable; but where this fails, or where the symptoms are so urgent as to require instant relief, there we may have recourse to the syringe.

"A very few words may comprise what I have to say regarding chloroform in these cases. For the purposes of anæsthesia it may be administered in severe and enduring paroxysms in the presence of a medical man; the necessity for a frequent repetition, the risk attending its administration in large doses by the patient or his friends, and the brief respite from pain which it affords, prevent the inhalation of chloroform from being largely used in the treatment of neuralgia; as a temporary palliative of course it is excellent, and in the hands of an experienced practitioner it cannot fail to be of much use. Anodyne liniments containing chloroform are in many cases valuable adjuncts in the treatment of neuralgic affections.

"The local application of moist warmth is also one of our most valuable adjuvants. Hot fomentations with plain water or medicated, or with the addition of spirits of turpentine, if properly applied, afford much relief. The chief points to attend to are, that the temperature be sufficiently elevated, and that the flannels employed be wrung out as carefully as possible. If they be only lukewarm, the effect will be *nil;* if they drip, they will cause much discomfort to the patient by wetting his linen, and thus, becoming a source of "cold," may bring discredit upon the medical man. The best way to use fomentations is to dip a large piece of flannel, folded in four, into a pail of boiling water, to place it in a dry towel, and, by turning the ends of the latter in opposite directions, to wring out as much water as possible; then, having again opened the flannel, sprinkle the turpentine or chloroform upon it and lay it upon the affected part, covering it over with a large piece of oil-silk. This process should be frequently repeated; but it is one, simple though it is, which the medical man should superintend in the first instance. The slovenly way in which so-called domestic remedies—amongst which fomentations may be classed—are often employed, deprives them of their value and impairs our confidence in them. But

if we make sure that our aids in the sick room do their work thoroughly, we shall then know how far our remedies do or do not fulfil their intention.

"It is especially in neuralgic affections of the trunk that hot fomentations or hot linseed meal poultices, which I would also advocate strongly, are beneficial. They act in the first instance by counter-irritation, and then by promoting the action of the skin, where they establish a more or less critical secretion. In abdominal neuralgia affecting the solar and mesenteric plexuses fomentations often act like a charm. But it is not only in affections of the sympathetic that we obtain these satisfactory results. Since beginning to write this paper, I have attended a lady with severe intercostal neuralgia simulating pleurisy, in which marked relief was afforded by the continued application of hot linseed poultices covered over with oil-silk.

"Amongst the many topical applications that are made to the unbroken surface there are two upon which I would briefly dwell: the one is bellandona, the other veratria. Of the former I have a high opinion; I hold it to be of more use as a topical application to the unbroken skin than preparations of opium. Whether it is more readily absorbed, or whether it possesses specific powers, I know not; but the frequent, almost daily, service that liniments and ointments containing belladonna have done me, justifies the encomium. Veratria too, though not generally employed, is a remedy which exercises a controlling influence over neuralgia; if an ointment containing from one to two grains to the ounce of lard be well rubbed into the seat of pain, the neuralgia is deadened, and generally a rash appears on the part."

ART. 22.—*On Apoplectiform Cerebral Congestion in relation to Epilepsy.* By M. TROUSSEAU, Physician to the Hôtel Dieu, Paris.

(*L'Union Médicale*, Jan. 17, 22, 31, and Feb. 7, 1861.)

On the 15th of last January M. Trousseau read a paper on this subject before the French Academy of Sciences, which has been the cause of many warm discussions in this learned body. Strange to say, M. Trousseau's opinions were most strenuously opposed by almost every speaker, and particularly by M. Bouillaud. On this side of the channel the case would have been very different, for here what M. Trousseau contends for would be looked upon as well-established truth by many, if not by the majority, of medical men.

"It is a prevalent opinion," says M. Trousseau, "that *apoplectiform cerebral congestion* is a very common disease, and the idea is so generally received, that any doubt expressed on the subject is likely to excite no little surprise. During the two years which I spent at the Lunatic Asylum of Charenton, as clinical-clerk, I witnessed, or conceived that I witnessed, numerous cases of apoplectiform congestion, and since then I fancied I had seen many instances in my practice or in hospital. For fifteen years, however, I have met with none. My fellow-practitioners, however, observe as many cases of the complaint as before; either, therefore, I am or they are in error, and I, of

course, conceive them to be mistaken, or I should adhere to their view.

"Let us inquire into the matter.

"A man, with or without any premonitory symptoms, is suddenly struck down by apoplexy, and for a quarter of an hour, an hour, or more, he remains dull, his mind is confused, and his gait uncertain; on the morrow he is perfectly restored.

"The patient is said to have had apoplectic congestion of the brain. I also have used the same language, but I have ceased for fifteen years to do so.

"Another individual is suddenly seized, while walking, with giddiness, his vision becomes indistinct, his speech embarrassed, a few unintelligible words are muttered; he staggers, and occasionally falls, but immediately rises again. The attack has lasted but a few seconds, slight headache remains, and sometimes a transitory obfuscation of the intellect, but in three or four minutes he recovers himself entirely.

"The patient is again said to have had a mild attack of cerebral congestion; I have used the same words, but have ceased for fifteen years to do so.

"What has caused me to alter my opinion? Not assuredly an idle love of paradox, but a different conviction has forced itself gradually upon me, from the observation of facts."

M. Trousseau then, after relating certain cases illustrative of both the forms of cerebral disease above referred to, continues:

"Since my attention has been solicited to these phenomena, I have inquired carefully, whenever I was consulted for a person thus attacked, whether from time to time sudden, transitory fits of giddiness had been observed in the day; whether such paroxysms of vertigo had not more frequently occurred at night; whether the fits had been ushered in by any spasmodic movements, and almost invariably, when witnesses had been present at the time, I was enabled to ascertain the undoubted existence of convulsive action. When the symptoms occurred at night, during sleep, I was informed that urine had escaped involuntarily, or that for some days the tongue had been painful; that the face, forehead, and neck had been covered with small specks of ecchymosis analogous to flea-bites, also that the accidents returned at short intervals, without leaving any permanent traces. In short, when inquired into with a sincere desire to arrive at the truth, the cases resolved themselves into genuine epilepsy.

"Not a month elapses without my being consulted by individuals suspected of apoplexy, or mild cerebral congestion, who are merely suffering from epilepsy.

"The vertigo of epilepsy frequently asserts its presence by symptoms which are invariably attributed to congestion of the brain, and towards which physicians, specially engaged in the study of insanity, have long since invited the attention of the profession. After the attack, a delirium of a few minutes' duration is occasionally noticed; this aberration of mind may even be protracted. The annals of justice and police reports abound with accounts of suicides and murders, too frequently referred by physicians to cerebral congestion, whereas they are the result of epilepsy. It may even safely be asserted, that

if a man, who has presented no previous mental disturbance, or any sign of lunacy or furor, and who is not under the influence of ardent spirits, or of other substances likely to affect powerfully his nervous system, commits suicide or murder, he is epileptic, and has suffered from a complete paroxysm, or, more commonly, from epileptic vertigo.

"These criminal acts are, I repeat it, attributed by most observers to transitory cerebral congestion, because the paroxysm has escaped detection, and because the vertigo is seldom recognised.

"Another cause operates in preventing the disease from being properly understood; namely, the reluctance of families to reveal even to professional men the existence of this dire complaint.

"I must acknowledge that one convulsive form may be readily mistaken for congestion of the brain. It happens sometimes, very seldom, however, that, in the incipient stage of an epileptic paroxysm, the tonic period, during which the muscles of the chest are in a state of absolute rigidity, lasts two or three minutes, instead of enduring but fifteen or thirty seconds as usual, and that death is induced by asphyxia, during the fit, as in tetanus, in the same manner as in animals poisoned by strychnia, by a mechanism which was demonstrated some forty years ago by our learned colleague Mr. Ségalas. As, in this instance, no clonic convulsions have been present, the spasms best known to unprofessional witnesses, as during the entire duration of the fit, the countenance has been turgid, and the blood-vessels of the neck distended and knotty, as, moreover, enormous congestion of a passive kind has really been present, analogous to that produced by effort, active congestion is supposed to have taken place, when, after all, the patient has expired in a genuine eclamptic or epileptic fit.

"I am confident that if those among my colleagues who direct their attention especially to the diseases of parturient women and of infants, appeal to their recollection, they will, probably, adopt my opinion.

"Another disease, continually referred to congestion of the brain, is giddiness induced by gastric disturbance. This singular form of neurosis is marked by the following characteristics:—when the patient suddenly moves in bed he feels his couch revolving with him; if he rises, and looks upwards, the giddiness increases, surrounding objects turn round, the subject staggers, and is sometimes unable to stand. At the same time excessive nausea and frequently vomiting supervene. The sufferers view these symptoms as the result of cerebral congestion, and most physicians consider them in the same light. Bloodletting, cupping, leeches, mustard poultices, &c., are resorted to, to dispel the alleged congestion, which these inappropriate remedies do not fail to increase.

"These attacks are more nearly akin to syncope, and are, therefore, the exact converse of congestion; and, prodigious as this may appear, it is, however, true, that too many practitioners even now misapprehend the nature of such cases, and confound the tendency to syncope, with cerebral congestion.

* * * * * *

"I would not, gentlemen, be understood absolutely to deny the existence of cerebral congestion. I fully admit the possibility of

[redacted]

hyperæmia [illegible]
doubt [illegible]
congestion [illegible]
manifestation [illegible]
that [illegible]
or [illegible]
the [illegible]
'I [illegible]
[illegible]
[illegible]
[illegible]
[illegible]

[illegible]

[illegible]

L[illegible]
[illegible]

swellings than others, not owing to the presence of [illegible] but to their greater liability to ill-usage and [illegible] effects. As to the assertion made by Flemming that the [illegible] the author replies that, during ten years' residence in large asylums he has never met an instance in which the injury could be traced either to the patient himself or to other patients who in his own [illegible] often able to bring it home to the attendants. The frequent accompaniment of the marks of finger nails show that the ear has been

seized and violently pulled by the fingers. Since he has laid down the rule in the asylum to which he is attached of holding the attendants liable for the occurrence of the swelling, the number of cases has remarkably diminished.

ART. 24.—*The influence of Pregnancy and Delivery upon Insanity.* By Dr. MARCÉ.

(*Annales Med.-Psychol.*, iii, p. 359; and *North Amer. Med.-Chir. Rev.*, Nov., 1860.

An interesting paper, illustrated by many cases, leads Dr. Marcé to these conclusions:

"1. We cannot protest too strongly against the practice of those physicians who advise or allow pregnancy in insane women, for it results from the facts mentioned in this paper that, in the great majority of cases, pregnancy and delivery, so far from exerting a favorable influence on insanity, seem, on the contrary, to hasten the progress of the disease towards dementia. If in certain exceptionable cases (2 in 16) pregnancy has suspended the progress of the disease, the improvement has been only temporary, and the insanity has reappeared after delivery. 2. In some few cases (4 in 16) remarkable specially for the predominance of erotic symptoms, pregnancy has exerted a beneficial influence on the cure. 3. When insanity becomes developed during pregnancy, it very often remains incurable, even after delivery, or is cured so long after, that no influence can be attributed to the latter in the termination of the nervous affection. 4. Sometimes, however (3 in 10 cases), the disease disappears after delivery, and these cases must be regarded as sympathetic. 5. Delivery in the insane is often remarkable for the slight amount, or even complete absence of pain."

ART. 25.—*On Hemicrania, or Migrän.* By E. DU BOIS-REYMOND.

(*Reichart und du Bois Reymond's Archiv f. Aaatomie, &c.*, Ht. 1860; and *Med.-Chir. Review*, Jan., 1861.)

This highly interesting case related and commented upon, occurred in the person of Du Bois-Reymond himself, and therefore was carefully observed. It is adduced as a contribution to the literature of morbid phenomena dependent on implication of the cervical portion of the sympathetic nerve. After certain prefatory allusions to the general subject of the influence possessed by the nervous system upon the muscular structure of minute blood-vessels, and to the existing opposition between neuro- and cellular-pathology, &c., the author details his case, which may be condensed as follows:

Ever since he was twenty years old, although otherwise in good health, he has suffered every three or four weeks after any little irregularity (such as long fasting, over-wearying company, &c.) from general indisposition, and slight pain in the right temporal region on awaking the next morning. This extends gradually, being, however, confined to that side of the head, so as to reach its height at mid-day, and again

departs towards evening. Whilst at rest the pain is bearable, but on movement it increases fearfully, as also under all circumstances exaggerating the pressure of the blood to the head, such as stooping, coughing, &c. It is synchronous with the pulse of the temporal artery, which, on the side affected, feels like a hard cord; the artery on the opposite having all the time a natural character. The countenance is wan and pale, and the *right* eye small and reddened; and at the height of the attack there is nausea, but never actual vomiting. When the attack is approaching its termination the *right* ear reddens and becomes much warmer, both subjectively and objectively. The seizure is curtailed by sleep. Slight gastric disturbance remains after the attack, and often one part of the hairy scalp is painful. The attacks are more frequent in the winter; they are entirely absent during travelling on foot; and latterly have been less frequent and regular than formerly, when the author used to exercise his mind more fully. The affection just detailed is evidently that ordinarily known under the term Migrän, which is universally considered to be a neuralgia, whose anatomical site is considered by Romberg to be placed in the brain; by Lebert in the first division of the fifth nerve, &c. In these attacks the observer, and at the same time the patient, considers that in his Migrän there is a tetanus of the muscular coats of the blood-vessels on the affected side of the head; in fact, a tetanus in the part dominated by the cervical portion of the sympathetic nerve on the right side, as is shown by the condition of the temporal artery, the pallor of the face, the sinking of the eyeball. A condition of the other branches of the carotid artery is naturally surmised, similar to that of the ophthalmic artery as well as of the vertebral artery. The tendency to vomit appears accounted for (just as Woollaston explained sea-sickness) by the alteration in the blood's pressure in the brain, as also the fluttering before the eyes often accompanying the Migrän and the use of digitalis. The redness and warmth of the parts about the ear observed on the departure of the headache arises from the weariness and relaxation of the unstriped muscles of the vessels following and consequent upon their over-contraction. The redness of the conjunctiva *during* the attacks is probably either owing to the muscular coats of its vessel being earlier relaxed, or to the fact of their having begun sooner to be contracted or tetanized than the coats of other vessels.

The above-described case of Migrän is, then, not be looked upon as an affection of the brain or cerebral nerves, but of that portion of the cervical region of the spinal cord termed by Budge and Waller the "*regio-cilio-spinalis.*" This being so, it ought to be found that a tetanus of the structures controlled by the sympathetic from this part of the cord, would be attended by a dilated pupil; and it so happened that during the attacks it was found, both by the patient and Dr. Schacht, that on the side affected the pupil of the eye was dilated, the other one remaining natural, and this was especially noticeable in proportion as the eye was shaded. Moreover, during as well as subsequent to the attack the spinous process of the lower part of the neck was painful on pressure. In his case Du Bois-Reymond thought that the pain of the head was the result of the pressure upon the sides of the

blood-vessels by the contained blood permitted by the tetanus of their muscular fibre. Du Bois-Reymond does not, however, assert that Migrän is of necessity explained in this way. On the contrary, he thinks it to be almost always a neuralgia. He concludes by drawing a parallel between his explanation of his own case and that of many epileptic attacks offered by Kussmaul and Tenuer.

ART. 26.—*Case of Traumatic Tetanus successfully treated by Conium Maculatum.* By Dr. CORRY.

(*Trans. of the Belfast Med. Soc.*, June 30, 1860; and *Dublin Quart. Journ. of Med.*, Nov. 1860.

CASE.—March 26, 1860.—Was sent for to visit J. Russell, æt. 55, manager of a spirit store, residing in Ballymacarrett. On my arrival I found him labouring under unmistakable symptoms of tetanus, which had set in two days previously; the paroxysms were frequent and severe, there was decided opisthotonos, with precordial pain, and the trismus was so great that he could only open his mouth to the extent of half an inch; there was, also, considerable difficulty in swallowing, and for the last twenty-four hours he had been unable to assume the recumbent position, from an agonizing sense of suffocation. Pulse 115, skin cool, bowels constipated. Upon inquiry, I ascertained that about ten days ago his left hand had been crushed between two casks, by which accident a severe lacerated wound had been produced; the injury, however, had, to all appearance, progressed favorably, and was now nearly healed.

Having previously had charge of two cases of this fearful malady, which I had treated unsuccessfully by the usual remedies, and having subsequently read M. L. Vella's communication to the Academy of Sciences, in Paris, on the employment of woorara in tetanus, and a paper by Mr. Spencer Wells on the same subject, I was anxious to give the poison a fair trial in the present instance, and accordingly endeavoured to obtain some for that purpose; however, not being able to procure any in Belfast, I took advantage of the suggestion thrown out by Dr. Radcliffe, "that conium, the physiological action of which is almost identical with woorara, might prove a more manageable and suitable remedy." I therefore ordered my patient five grains of the extract every three hours, dissolved in water, having previously evacuated the bowels by an enema of castor oil and turpentine. After the medicine had been administered for twenty-four hours there was a decided improvement in the symptoms; he was now able to lie down, obtained a short sleep, and the spasms were less acute; the pulse also fell to 100. Forty-eight hours afterwards, the peculiar physiological effects of the conium began to manifest themselves; he complained of general debility, accompanied by numbness and loss of power in his lower extremities; the paroxysms occurred at long intervals, and were greatly diminished in severity; pulse 80. Ordered the medicine to be continued, with wine, beef-tea, and eggs, to support his strength. At the expiration of a week, complete paralysis of the lower extremities had been produced; the upper limbs were also much affected, and there was considerable difficulty in deglutition; the spasms and rigidity of the different muscles had now all but subsided; there was, however, still some trismus, and he slept but little. I had, therefore, to order him, in addition to the conium, an occasional night-draught of the solution of the muriate of morphia. By the end of a fortnight it was considered necessary to diminish the dose,

and give it less frequently, as the muscles of respiration were becoming affected, the paroxysms had entirely ceased, and slight trismus alone remained. I now carefully watched the action of the medicine, and on the twenty-first day from its first administration was enabled to discontiuue its use, as every symptom of tetanus had disappeared. A stimulating liniment was now applied to the limbs, with quinia internally, and in another fortnight he was able to return to business.

Remarks.—Notwithstanding the attention which has of late been directed to pathological investigations, our knowledge of the true nature of tetanus is as yet far from satisfactory; the disease consists of a peculiar excitement of the medulla oblongata and true spinal system, occasioning severe continued spasms of the voluntary muscles, followed by imperfect relaxations. Our line of treatment should, therefore, consist in removing local irritation, and allaying nervous excitement. So far back as 1811, Sir Benjamin Brodie demonstrated by experiments the powerful sedative effects of woorara in controlling muscular spasm; and in 1836 Mr. Curling stated, in his treatise on the subject, that the poison was deserving of a cautious trial in acute cases of tetanus in the human subject. However, the great drawback to its use is the impossibility of procuring it of uniform strength, and the consequent difficulty of regulating its action. In conium we have a much more manageable agent, possessing all the sedative powers of woorara, without its disadvantages. During the treatment of the foregoing case, I watched its action carefully, and found, that by either increasing or reducing the dose, its effects could be proportionally augmented or diminished. It would, of course, be unfair to form a decided opinion of the curative powers of any remedy from the result of a single trial; but I must say, that, from the first, I found it so manageable and beneficial in its action, that I would have every confidence in again using it under similar circumstances.

Art. 27.—*Cases of Tetanus in which Stimulants were administered freely.*

(*Amer. Med. Times*, Jan. 26, 1861.)

These cases occurred in the Bellevue Hospital, New York. The name of the gentleman who reports is appended to each case; but no mention is made of the medical officer or officers under whose instructions the house-physician and house-surgeon may be supposed to have been acting.

Case 1. *Idiopathic Tetanus.—Symptoms temporarily relieved by Quinine. —Permanent relief by the administration of Whiskey in large quantities.*—(Reported by P. C. Barker, M.D., House Physician.)—Thomas M'Adams, æt. 19, born in Ireland, of healthy constitution and temperate habits, was admitted October 22d, giving the following history.

History.—For four months during the past summer and fall he worked at Haverstraw in a brickyard. Leaving there about the 1st of October, he came to New York, and went to work as 'longshoreman. While at work in the hold of a schooner, October 14th, he got very warm, and sat down in a current of air covered with perspiration. During the following night he was seized with violent substernal pain, and cough. At the same time a severe pain began in the left groin. On the next morning trismus was developed, slight at first, and attended by some stiffness of the muscles of the neck, abdomen, and legs. From this time till that of his admission the stiffness

steadily increased. The substernal pain, which was at first superiorly, moved down towards the ensiform cartilage. No pain in the back or head. The pain in the groin continued, showing no tumour or discoloration. He perspired profusely during the paroxysms, which occasionally occurred, from the first.

Symptoms on admission.—He walks with difficulty, being unable to flex either the thighs or legs. He moves his arms very well. The abdominal muscles are rigid. He suffers from occasional startings and increased rigidity of the muscles, from which he sweats profusely, has considerable dyspnœa, and suffers great pain. His countenance exhibits the true risus sardonicus. The trismus is complete. All the food taken must be fluid. Two or three days previous to his admission he received a fall when attempting to walk, and broke one of his central incisors. Through this opening he receives all his food. Bowels very slow; pulse normal; sleeps very little. Physical examination of thorax reveals the existence of bronchitis. Coughs a little, raising a tenacious sputum.

Treatment.—Coming, as he did, from a region notorious for its miasm, it is decided that quinine in large doses shall be given. Ordered ʒ i daily in divided doses. The diet to be generous.

October 24th.—The paroxysms return less frequently, are milder, and the rigidity is much less marked. He can open the mouth a little.

25th.—Rigidity nearly disappeared. Slept very well last night. Ordered dry cups to spine.

26th.—Since yesterday's note the rigidity and spasms have returned fully as severe as at first. The teeth are again closed, the sardonic grin again overspreads his face, and he lies as stiff as if frozen. It is deemed advisable to resort to the stimulant treatment, as quinine has been carried to cinchonism. Ordered whiskey ʒ ss every fifteen minutes. Beef-tea and eggs as before.

27th.—Paroxysms a little less severe, and less frequent to-day than yesterday. Treatment continued.

29th.—Very little better than on the 27th. Ordered whiskey reduced to ʒ vi daily. Morphine to be given in sufficient quantity to bring him fairly under its influence, and maintain it.

30th.—No spasms; rigidity less marked; the sweating still continues. Respiration 14, sleeps considerably.

November 1st.—Rigid again; whiskey resumed: ʒ xxx to be given daily.

2d.—The rigidity is again less marked. He lies on the side, and can flex his legs somewhat. Spasms infrequent. Appetite good, bowels still very slow; enemas given on alternate days. Sleeps very well.

4th.—Whiskey increased to ʒ xlviii daily.

5th.—Last night, for the first time, he showed the usual effects of intoxication, became very hilarious, and made considerable noise. Same quantity of whiskey continued.

7th.—Did not sleep very well last night; still he is improving. No more symptoms of intoxication.

9th.—Improving steadily. Whiskey reduced to ʒ xxx daily.

12th.—He can walk by holding on to something. Complains of cold feet, and believes that this condition excites spasms. The abdomen still very tense.

14th.—Walks about. Had a momentary spasm last night. Says he feels well to-day.

30th.—He has steadily improved since the last note; so much so, that only a little stiffness remains in the legs. The abdominal walls, however, are still

rigid. No whisky has been given since the 21st, having been steadily diminished since the 9th instant.

December 3d.—Discharged, well.

CASE 2.—*Lacerated Wound of Fore-arm.—Tetanus.—Death.*—(Reported by HOWARD PINCKNEY, M.D., House-Surgeon.)—Thomas Hughes, æt. 18, born in Ireland, labourer, admitted September 13th, 1860 (service of Dr. Meier), with a wound of fore-arm caused by a circular saw. The muscles and tendons on radial side of fore-arm were very much lacerated, and the radius was cut completely through; the radial artery was not injured, but there was considerable hæmorrhage from the inter-osseous artery, which was controlled by strongly flexing the fore-arm, and confining it in that position by a roller bandage, thus making pressure upon the brachial at the elbow.

14th.—The fore-arm was placed upon a splint, and cold-water dressings applied.

23d.—Patient has been doing well until this morning; he complains of some stiffness in moving the lower jaw. Ordered brandy.

23d, 6 p.m.—Patient can only open his mouth to a very limited extent, head thrown back, but no rigidity about the neck. Profuse perspiration; pulse 140, and feeble. Ordered brandy, ℥ss, and tr. opii, gtt. xv, with beef-tea every hour. Patient was placed in a warm bath with potass. carb. ℥iv dissolved.

24th.—Patient slept pretty well last night; he is unable to bring his head forward this morning; pulse 140; same treatment continued, with dry cups over spine. Tetanic physiognomy well marked. Consultation was held this morning, when amputation of fore-arm was decided upon, but the mother of the patient would not consent to the operation.

24th, 6 p.m.—Tetanic symptoms growing more marked. Ordered—℞ Ext. cannabis indicæ, grs. ij, every three hours. Brandy and beef-tea as before.

25th.—Patient has a general convulsion, which was partially relieved by inhalation of chloroform. Opisthotonos well marked. Ordered—℞ Tr. assafœtidæ and camphor, ℥ss. q. h. The patient has had two convulsions since morning, and at 4·30 p.m. he died. No autopsy followed.

CASE 3.—*Trismus following the opening of an Abscess of the Thigh.—Recovery under the use of Stimulants and Anodynes.*—(Reported by WALTER T. COLES, M.D., Senior Surgeon.)—Wm. N—, æt. 27, a native of Ireland, unmarried, a shopkeeper's clerk, entered the hospital on the 25th of August, 1860. He was then suffering with pain and tenderness about the right trochanter; the pain was felt in front between the pubes and the trochanter major. Fluctuation was at length discovered a little below the trochanter, and an opening was made at that point. The abscess discharged freely for several days, when suddenly the flow of pus ceased, and symptoms of trismus appeared. An attack of bronchitis occurred about the same time. He was treated with tinct. opii, gtt. x, every hour, administered in an ounce of brandy, the amount being diminished as the symptoms improved. The symptoms returned when the treatment was omitted. These remedies were, therefore, continued for several weeks, in gradually diminished quantities. The symptoms at length disappeared.

ART. 28.—*A case of Traumatic Tetanus treated by Aconite.* By Dr. GEORGE SMITH, Residency Surgeon, Hyderabad.

(*Madras Quart. Journ. of Med. Science*, Jan., 1861.)

This case is that of a boy, æt. 10½, Gholam Hussain by name, of a spare habit, who had injured the nail of one of the fingers of his right hand in the hinge of a door ten or twelve days before.

11th Aug., 1859.—Complaining of stiffness in the masseters, and of rigidity and pain in the neck and between the shoulders. Pulse 105. Two drops of Fleming's tincture of aconite to be given every hour, a turpentine and castor-oil injection to be administered, and a liniment containing opium, belladonna, and aconite, to be rubbed on the stiff and painful part. Broth, also, to be given freely, and the injured finger to be poulticed. After two or three doses, vomited several times, and a tingling sensation felt in the injured finger alone. Enema repeated in the evening.

2d, 3d, 4th, and 5th days.—No material change in the symptoms or in the treatment.

6th day.—A very restless night. Pain and hardness in the extensors of the back. Pulse 99, small. Uneasiness over insertion of diaphragm and in the muscles of the eyes. Frequently cries out with agony. Spasms on the increase. Being awakened suddenly, had a severe attack of opisthotonos and trismus, with jerking of the arms. Nearly thirteen drops of the tincture given in the course of the day.

7th day.—No material change. Recurrent opisthotonic spasms, and one attack especially severe. Occasional difficulty of breathing, causing great anxiety and alarm. Pulse 66, weak. Mouth tightly closed. Nearly 50 drops of the tincture given in the course of the day.

8th day.—Very weak, anxious, and exhausted. The spasms continue with very little intermission. No sleep. Ninety-five drops of the tincture given in the course of the day, and 20 drops of Battley's solution at bedtime.

9th day.—Much the same as yesterday, in the early part of the day. Drowsy and tranquil in the afternoon. In the morning 10 drops of the tincture of aconite and 8 drops of Battley's solution were given every two hours; in the afternoon the opiate was omitted, and the aconite given alone. During the evening had a return of the severe spasms, but on the whole the tetanic action is much slighter. The draught containing opium as well as aconite to be resumed. Eighty-five drops of the tincture of aconite taken in the course of the day.

10th day.—Somewhat better. Pulse 99, regular. Complains of giddiness. Less spasm. Bowels very constipated, and requiring croton oil and a turpentine enema to make them act. One drachm of Fleming's tincture taken in the course of the day.

From this time the patient improved every day. For a week the aconite was given, sometimes with, and sometimes without, the opium; a fortnight later he went home well; a month later still he continued well.

The tincture of aconite (Fleming's) used was prepared by Messrs.

Duncan and Flockhart, of Edinburgh. The doses were administered in drops and minims, three of the former having been found, after repeated trials, to be equivalent to two of the latter. The total quantity of the tincture given, during the 17 days of the treatment, amounted to one ounce and twelve minims. The daily quantities administered were as follows:

1st	day	Tinct. given	♏ 13½
2d	„	do.	„ 8⅔
3d	„	do.	„ 14⅔
4th	„	do.	„ 2⅔
5th	„	do.	„ 2
6th	„	do.	„ 12⅔
7th	„	do.	„ 49½
8th	„	do.	„ 95½
9th	„	do.	„ 85
10th	„	do.	„ 60
11th	„	do.	„ 53
12th	„	do.	„ 25
13th	„	do.	„ 40
14th	„	do.	„ 8
15th	„	do.	„ 6
16th	„	do.	„ 4
17th	„	do.	„ 13
		Total	℥j and ♏xii ¾.

The largest quantity, upwards of one drachm and a half, was administered on the 8th day. The tolerance of the remedy was a pretty sure test of the severity of the disease; as the disease gave way, this tolerance very perceptibly decreased; hence doses which on the 8th, 9th, or 10th days, barely sufficed to hold the disease in check, would have proved fatal had they been given upon the 14th, 15th, or 16th days, when the symptoms were rapidly subsiding.

The specific effects of aconite as detailed by Fleming, Christison, &c., were all observed in this case of tetanus: for example—numbness and tingling of the lips and tongue; nausea; general warmth and perspiration of the surface; tingling of the fingers and toes; muscular weakness; mental and bodily lassitude; feeble pulse; slow respiration; soreness of the throat and stiffness of the tongue; confusion and dimness of sight; weakness of voice; consciousness being quite unimpaired throughout. It was remarked that the action of aconite did not last long, hence the necessity experienced of repeating the doses every second or at most every third hour. Cessation of tetanic action, more or less distinct, took place soon after taking a dose; but though the action of the poison on the general system continued for some time, its specific influence upon the disease appeared soon to pass away.

ART. 29.—*On the treatment of Epilepsy by Curare.* By M. THIERCELIN.

(*Journal of Pract. Med. and Surgery*, Dec., 1860.)

M. Thiercelin's communication is addressed to the French Academy of Sciences, and referred to a commission, consisting of MM. Flou-

rens, Velpeau, Pelouse, A. Bernard, and J. Cloquet. The cases in which the experiment was tried are two in number. One is that of a young man, aged twenty-three, in whom epilepsy was both congenital and hereditary; the other is that of a girl, aged seventeen, who had been affected eight years.

Curare was exhibited, through the surface of a blister, in doses varying from $\frac{1}{2}$ gr. to 1 gr. daily. In the space of two months (December and January last), the paroxysms became much less frequent, and fell in January from fifteen or twenty to five in one case, and from twenty-eight or twenty-nine in the other to eight. The convulsions were also of a milder character, and the general state of the constitution was much improved. M. Thiercelin, however, remarks that, jointly with curare, he exhibited other remedies which had been in previous use, such as valerian, cold diet, &c.

At the close of the second month, the supply of curare being deficient, the treatment was discontinued, and the fits returned in February to their original frequency, viz., 15 in one case, and 24 in the other, per month.

— It would not be difficult to find many good reasons for concluding that good is not likely to arise out of this mode of treatment; but we will content ourselves with mentioning the fact, that curare has failed altogether in the cases of tetanus and rabies in which it has been tried, and that conium, the physiological action of which is strictly analogous to that of curare, has been found to do harm rather than good in epilepsy.

Art. 30.—*On a possible cause of Epilepsy.*

By (1) M. Demeaux, of Puy l'Evêque, and (2) M. Dehaut.

(*Jour. of Pract. Med. and Surgery*, Nov. and Dec., 1860.)

1. From a certain number of cases, which have fallen under his personal observation, M. Demeaux is convinced that *a state of ebriety in man, at the time of sexual intercourse, is often a cause of epilepsy in the offspring*. In the course of twelve years this gentleman has met with 36 epileptic individuals, and he has been enabled to ascertain that five were procreated while the male parent was in a state of intoxication. He has traced twice congenital paraplegia to the same cause in one family, and twice also idiocy and insanity, in subjects aged respectively seventeen and five years. M. Demeaux hence concludes that intoxication exercises in the generative act a baneful influence upon the fœtus, and that it is highly important that this fact be widely promulgated.

2. M. Dehaut adduces the two following facts in support of the view entertained by M. Demeaux:—Young X—, aged fifteen, has been subject to epileptic fits since the age of eighteen months. When this child was conceived, his father, a notorious drunkard, had been for nine days in a state of partial or complete intoxication. In the second instance, brought forward by M. Dehaut, the father also pleads guilty to intemperance at the period of the child's conception. The subject, who has now reached his twenty-second year, has been affected with epilepsy from his infancy.

ART. 31.—*Analysis of fifty-two cases of Epilepsy observed by the Author.* By Dr. SIEVEKING, Physician to St. Mary's Hospital.

(*Proceed. of Royal Med. and Chir. Society*, March 2, 1861.)

This is a second contribution of the same character as the one noticed in a previous volume ('Abstract,' XXVI, p. 57), and the author has limited the analysis to the same number of cases, taken in the order of observation, as had been subjected to analysis on the former occasion. Only those points were brought forward on which satisfactory evidence could be obtained.

Sex.—23 were females, or 44·2 per cent. 29 were males, or 55·8 per cent. Taking the two series together, the ratio of females to males was as 45·2 to 54·8.

Age.—The following was the distribution throughout the different periods of life:—Under 10 years, 12 cases; from 11 to 20, 25 cases; from 21 to 30, 7 cases; from 31 to 40, 3 cases; from 41 to 50, 2 cases; above 51, 3 cases. The basis of this calculation is the time at which the epilepsy first showed itself. Arranged according to sex, we find during the first decennium 8 males and 4 females; during the second, 11 males and 14 females; during the third, 5 males and 2 females; during the fourth, 3 males; during the fifth, 1 male and 1 female; during the sixth, 1 male and 2 females.

Causes.—An hereditary taint was traceable in 14 cases, but in 8 only of these was there evidence of epilepsy having occurred in a near relative of the patient. The exciting causes were traced in 37 cases as follows:—Uterine derangement, 9 cases; venereal excesses, including masturbation, 6 cases; fright, 4 cases; over-work, 4 cases; anxiety, 3 cases; dyspepsia, 3 cases; dentition, 2 cases; scarlet-fever poison, 2 cases (doubtful); meningitis, anæmia, blood-poison, and the development of puberty, each 1 case.

Premonitory symptoms.—Comprising under the term "aura" all symptoms indicative of a near approach of a paroxysm, the author found it in 21 cases, or 40 per cent., or less frequently than it was met with in the first series, where 52 per cent. of the cases exhibited premonitory signs.

Headache.—Headache is very commonly associated with epilepsy, but its significance varies much, according to its period of occurrence; it may be habitual, or it may be connected with the attacks only as a precursor or a sequela. It was constant or frequent in 9 cases, 17·3 per cent.; it occurred after the seizures only in 12 cases, or 23·0 per cent.; it occurred only immediately before or after the fits in 3 cases, or 5·7 per cent.

Biting the tongue.—Although a large number of genuine cases of epilepsy occur in which this symptom is never met with, it is important as a corroborative symptom. In the first series it was met with only in 32·7 per cent.; in the present, 28 patients, or 53·8 per cent., exhibited this feature. It did not appear that the female sex, as might have been anticipated, were less prone to inflicting this injury upon themselves than males; because of the 24 cases in which the tongue had not been bitten, 16 were males and 8 females.

Urine.—The author has found no constant derangement in the urine associated with epilepsy. He has always failed to discover any sugar, nor has he met with a constant or even frequent excess of phosphates, or a diminution of urea. In several cases he found the urine presenting a specific gravity, ranging about 1030, and containing a large excess of urea. There was in the present series no case of albuminuria, except, perhaps, in one instance, in which a small quantity of albumen appeared to be present for a brief period. An excess of phosphates was observed twice, oxalates in one or two cases, and an excessive deposit of lithates in a small number of cases.

Treatment.—The author, while urging the value of treatment in alleviating the disease, and indefinitely postponing the seizures in a larger number of cases, admitted the doubt which always attached to any absolute cure of epilepsy. He advocated no specific, but the employment of all rational means indicated by the constitution and peculiar symptoms of each individual case. Above all, he considered perseverance in a combination of moral, regiminal, and medical treatment essential. As many of the cases analysed had not been under the author's care permanently, he did not regard the result as to treatment indicative of what might have been effected in the whole series. He considered that he could lay claim to 8 cures, that 15 were decidedly benefited, while the remainder were either uninfluenced by treatment, or did not continue under observation for a sufficient period to justify any positive statement as to the result.

ART. 32.—*On changes in the Retina and Optic Nerve in some Cerebral Affections.* By Dr. A. VON GRAEFE.

(*Gaz. Hebdom. de Méd. et Chir.*, No. 44, 1860.)

Professor A. von Graefe, during a recent visit to Paris, communicated to the Biological Society the results of his investigations concerning certain changes in the retina and optic nerve, observed in connexion with different cerebral affections. An individual suffering from hemiplegia and partial dementia, together with paralysis of the seventh pair and periodical epileptiform convulsions, was also affected with complete blindness, his pupils being markedly dilated. Ophthalmoscopic examination furnished the following results:—The papilla of the optic nerve was rounded (*bombée*), forming in front of the retina an irregular hemispheric projection. Its substance seemed opaque, red, and injected, having minute apoplectic deposits scattered through it here and there. At the edge of the pupil, to an extent of two or three millimètres, the retina was opaque, and as much injected as the papilla. After death, a sarcomatous tumour was found compressing the hemisphere on the side opposite to that on which paralysis existed. The trunks of the optic nerves were perfectly healthy, but the papilla had undergone alteration, there being serous infiltration and hypertrophy of the interstitial cellular tissue. The nervous elements, having undergone compression, exhibit, consequently, very decided atrophy. The same ophthalmoscopic appearances, and the same changes in the optic papilla, have been observed by Professor von Graefe, in three other

cases, in which, as in this case, large intra-cranial tumours compressed and forcibly flattened the cerebral mass. He believes that it is to such compression, and to the resulting venous stasis, should be referred the serous infiltration, and later the hypertrophy of the cellular elements of the papilla, and adjacent parts of the retina. Changes in the retina and optic nerve, which have nothing in common with the preceding, but which (like them) may rapidly give rise to blindness, are met with in certain cases of cerebritis, even when this affection runs the rapid course proper to acute affections. The lesions of the optic nerve and retina are those of an inflammatory kind, not only the papilla but the entire trunk itself, throughout its whole course being affected. The inflammation appears to commence at the cerebral extremity of the nerve, which, so to say, receives it from the brain, and transmits it successively along its trunk until the retina is reached, the central portion of this first being invaded, and then its periphery. This diffuse retinitis, consecutive to a "descending neuritis," rapidly gives rise to blindness, either double or unilateral, according to the case. As long as the changes are confined to the encephalon, and do not directly involve the optic nerve or the retina, there is no blindness properly speaking, a mono- or bilateral hemiopia being the only disturbance of vision. The same happens in the cases when a hæmorrhagic deposit, or any other circumscribed lesion, has its seat in a corpus striatum, or in one of the optic thalami, without directly involving the optic nerve or retina. Under such circumstances, there is never blindness, while hemiopic amblyopia, whether mono or bilateral and symmetrical, is very commonly observed. This last fact has long since led Professor von Graefe to agree in opinion with Woollaston concerning the semi-decussation of the optic nerve.

ART. 33.—*Hysterical Contractions of the Joints cured by cold-water douche.* By R. C. CHANDRA, officiating Civil Assistant-Surgeon Umritsur.

(*Indian Lancet*, Sept. 1, 1860.)

CASE.—The subject of this disease was a young woman, a prisoner in the Umritsur Jail, of which I am in temporary charge, during the absence of Assistant-Surgeon L. H. I. McLean. She is about seventeen years old, of fairish complexion, and nervous temperament. When I first saw her, both her elbows and knees were in a contracted state,—the fore-arms could be opened only to an angle of thirty degrees, but the legs were tightly flexed on the thighs. She could not walk, of course, and required to be fed by another. There were no visible structural alterations in the joints, and no subjective pain on pressure. If told to stretch her fore-arms or her legs, she would say she could not; and the slightest attempt at forcible extension would apparently cause her most excruciating pain.

On inquiry I was informed that she had been in that state for nearly two months, that the disease came on suddenly without any assignable cause, that it was not accompanied with any inflammatory symptoms (neither rheumatic nor simple), and that both internal and external medicines, in the shape of blisters, liniments, Plummer's pills, &c., had been tried, but without effect. From a careful examination of the case, from her history previous to the attack of the disease, from her peculiar nervous look and manners, accom-

panied with occasional mental aberrations to which she is subject, and from the absence of any disease of the joints, inflammatory or otherwise, acute or chronic, I was led to the conclusion that it was nothing else but one of the phases of that proteus-like disease in women—hysteria.

How to treat her was the next consideration. I recollected at the time the wonderful cures Mr. Corfe, of Middlesex Hospital, used to make of similar cases, by indefatigably pouring cold water on the joints, and I determined to give it trial in this case. I did not, however, begin this for about a week, during which time I ordered her a little uterine alterative medicine in the form of pills, which were afterwards replaced by simple bread pills.

The female attendant was also told to speak to her, and persuade her to exert herself to stretch her extremities, assuring her that she would surely succeed if she would only try with firmness of mind.

A week elapsed and yet no change for the better; and on the morning of the 10th August I began the *water-cure*. Ordered three mussucks of water, and in my presence had the whole poured in a small stream from a height on the right elbow only, which was supported out. After the first mussuck, the patient importuned me to order it to be stopped, but I told her that she should not *think* of such a thing before her arm became straight. No immediate effect followed the first day's trial. At the time of leaving the ward, I left strict orders with the native doctor to have eight mussucks of water poured, two on each of her joints, twice every day—namely before sunrise and after sunset. I told him further that the more steadily he persevered with it morning and evening, there would be the greater chance of her recovery. He did as ordered, but without apparently having much faith in what I told him; for he said that all sorts of medicines had been tried on her, meaning to say thereby, *and what can simple unmedicated water do for her?*

This was continued for six days, without the least improvement. On the 16th, I was informed by the native doctor, that on the previous night the female attendant, when the patient was asleep, tried gently to extend her arms, and found to her great astonishment that they yielded most easily and became perfectly straight; but that when the patient awoke the arms became flexed just as before. I now felt satisfied that my diagnosis was correct, and I told the native doctor that on the next visiting day I would try the effect of chloroform, and see whether the contracted joints would yield under its influence like hysterical tympanitis. The next visiting-day—the 18th of August—being a general inspection day, as in going round I came to the female ward, I found to my great surprise my patient walking about the ward, quite a different person altogether.

On inquiring how this happened, I was informed that, after that experiment of the nurse, she (the patient) was told that unless she extended her forearms and her legs whilst awake, the case would be reported to me, and that she would be severely punished, and that accordingly, on the 17th of August, after her cold douche, the patient began to walk.

The patient also told me *her version* of the cause of her cure, namely, that as the devil, of whom she was possessed, left her yesterday, she became all right. But I told her, in a firm tone, to bear in mind, that if the devil came to her again, I would catch him and have him hung, and also get *her severely* punished for keeping correspondence with the devil.

The patient is doing well now.

(B) CONCERNING THE RESPIRATORY SYSTEM.

ART. 34.—*A record of thirty-two cases of Pneumonia.* By Dr. HANDFIELD JONES, Physician to St. Mary's Hospital.

(*Med.-Chir. Review*, Jan., 1861.)

This commuication is a record of *all* the cases of pneumonia which have been specially observed by the author. Of these 32 cases 10 died—a high rate of mortality, which "is partly to be accounted for by the severity of some of the cases, and, partly, it may be, by the author not having been sufficiently aware, at the time, of the danger of antimony prostrating the system, and not the disease."

"1. One point well shown by the foregoing cases is the exceeding diversity that prevails between different cases of pneunomia with regard to their most essential features. Several of those above recorded are as unlike as they can well be. How manifest it appears that it is impossible to class all these together, and lay down a general plan for their management! This is no new doctrine, but yet it seems often forgotten, or tacitly set aside. Writers debate of the treatment of pneumonia, and compare statistics of mortality, according as it is treated in one mode or another, not remembering apparently that the things they compare may be utterly dissimilar. Morbid anatomy and physical signs are very unsafe guides to trust entirely to. The processes which give rise to those changes and phenomena which we can discern, are not seldom of entirely different dynamic character. One is evidently checked and subdued by an agent which is quite without effect by another. These interior differences are often betokened by external signs, as the state of the countenance, the pulse, the muscular and nervous system, the condition of the skin and of the sputa. These are more declarative of the true quality of the disease than the sounds appreciated by the ear, or the post-mortem revelations. The adage adopted by Trousseau, that "Naturam morborum remedia ostendunt," is to the clinical observer the most practically important. If in any given case he doubts, as he often will, what is the right course to pursue, let him test the state of the system cautiously with some agent of known power, and observe the effect. The result will generally put him on the right track. In some cases confinement to bed and restricted diet may be all that is necessary to insist on, and the inflammation may be left to take its course. In other cases tonics and stimulants must be freely employed. In others, again, depletion, with antimony and ipecacuan, will be of essential service. These statements, I believe, cannot be denied, and if not, it seems to me but a little step further to maintain that one or other kind may be the prevalent form of disease at different periods. It is obvious that the view here taken is the one which tends most to make the physician a careful practitioner. One who believes that all inflammatory disease is of an uniform and unvarying type, to be dealt with by brandy according to one school, by bleeding and antimony according to a second, and by expectancy according to a third, cannot fail of becoming a routinist. But he who believes that inflammatory disease, of all others, is most

varying and uncertain, will ever be on the watch to adapt his treatment judiciously to the case before him.

"2. If pneumonia has fairly set in, it is matter of great uncertainty whether it can be arrested, or prevented from advancing to hepatization more or less extensive. In only one of my cases does it seem probable that this was accomplished. On the other hand, there is no question that the resolution of the inflammation and resorption of the exudation can be materially accelerated and promoted by treatment. Convinced as I am of the mischief that may be done by pushing antimony too far, I should yet be truly sorry to be deprived of it as a remedy.

"3. In London children, if below the age of two years, ipecacuan, nitre, and saline mixture, with or without a little opium, given very frequently, is preferable to antimony. In tolerably strong children, especially if seen early, leeching is most useful."

ART. 35.—*Clinical Report on Pneumonia, based on an analysis of 133 cases.* By Dr. AUSTIN FLINT, Professor of Clinical Medicine, &c., in the New Orleans School of Medicine.

(*North American Med.-Chir. Rev.*, March, 1861.)

Professor Flint's clinical records, for the past twelve years, contain 133 cases of pneumonia (exclusive of cases in which the patients were under five years of age), 49 of which were observed in the Buffalo Hospital of the Sisters of Charity (1848-1859), 53 in the New Orleans Charity Hospital (1858-9 and 1859-60), 11 in the Louisville Marine Hospital (1853-4 and 1855-6), and 20 in private practice (1851-1860), mainly at Buffalo. The plan of analysis has reference to the ages, occupations, and habits of the patients, the circumstances connected with the causation of the disease, &c.

I. *Age.*—Pneumonia has no predilections for any particular periods of life. The number of cases occurring at different ages is sufficient to show that no period of life is exempt from it.

II. *Sex.*—The male sex is much oftener affected than the female—of eighty cases in hospitals and private practice, but ten being females.

III. *Occupation.*—It is not produced directly by any particular occupation; it occurs chiefly among persons whose callings involve muscular exertion and exposure to the weather. Occupation noted in eighty-seven cases, exclusive of female patients—fifty-two of these were labourers. Occupations of the remainder of a kind to involve, more or less, exposure to the weather.

IV. *Causation.*—It has no pathological connexion with periodical fever. Other pulmonary affections do not predispose to it; some, as asthma, emphysema, and chronic pleurisy, appear to afford a protection against it; occurs, but not frequently, in those affected with organic disease of the heart; may be produced traumatically, by external injury, or the passage of a pistol-ball through the chest; not one of the secondary affections referable to degenerative disease of the

kidney. May not unfrequently be traced to some exciting cause, as unusual exposure to cold and wet, but generally occurs when no exciting cause is apparent; is oftener developed abruptly than in a gradual manner.

V. *Comparative frequency of cases of the disease at New Orleans, Louisville, and Buffalo.*—Cases not as numerous at Buffalo as at Louisville, and by far more frequent at New Orleans than in the other two places. At Buffalo cases occur in January, March, and April, much more frequently than at other parts of the year; at New Orleans, more numerous in November and December than in any other of the winter months; and of the comparatively few cases observed at Louisville, three fourths occurred in January.

It would be interesting to see if these irruptions of pneumonia are connected with any uniform meteorological changes, but the data for such a comparison are not at present available. Still another fact leading to the conclusion that pneumonia is determined by external causes is its occasional prevalence as an epidemic in southern and south-western portions of our country, especially among the negro population.

VI. *Seat of the disease and extent of lung affected.*—Results in 121 cases show the almost invariable extension of the inflammation over at least a lobe of the lung; that the most frequent variety of lobar pneumonia is that in which the inflammation extends over the whole of the right lung (37 cases). This would not have been expected, and would not be the fact were it not for the tendency of the disease to extend over the whole of the right lung being greater in New Orleans and Louisville than in Buffalo. Next in order of frequency is that variety in which the lower lobe of the right lung is alone affected (29 cases). And at Buffalo the latter is the most frequent variety.

These results, however, show that the cases in which the disease is limited to the lower lobe of the left lung (25 cases) are nearly as numerous as those in which the lower lobe of the right lung is alone affected. This would not have been expected, the common belief being that the lower lobe of the right lung is much oftener the seat of pneumonia. Inflammation seated primarily in the lower lobe of the left lung rarely extends over the whole of that lung (9 cases). The lower lobes of both lungs (double pneumonia) are rarely affected (7 cases).

Pneumonia very rarely attacks primarily the upper lobes, and oftener the upper lobe of the right (8 cases) than the upper lobe of the left lung (3 cases). When the whole of either lung is affected, the liability of extension of the disease to the opposite lung is excessively small.

VII. *Complications of Pneumonia, and the occurrence of Gangrene and Abscess.*—1. *Pericarditis and delirium tremens* were complications oftenest observed, each occurring in 8 out of 133 cases. The latter is simply a superadded affection, generally attributable, in part or entirely, to discontinuance or diminished use of alcohol after the attack of pneumonia. Six of the eight cases of pericarditis and three of the eight cases of delirium tremens were fatal. These results show

the gravity of pneumonia complicated with pericarditis, but recovery may take place even when, in addition, the inflammation of the lung eventuates in abscess.

Exclusive of pericarditis and delirium tremens, complications of pneumonia are by no means common—a remark applicable to New Orleans, Louisville, and Buffalo; but complications exist more often at New Orleans and Louisville than at Buffalo.

2. *Gangrene and abscess.*—In four cases existence of abscess was ascertained; may have existed in some fatal cases in which it was undetermined, the bodies not being examined after death. The pneumonia eventuated in gangrene of the lungs in one case only.

VIII. *Fatality and duration*—.1. *Fatality.*—In 133 cases there were 35 deaths—a fatality of a fraction over 26 per cent. Proportion of fatal cases considerably larger at New Orleans and Louisville than at Buffalo, the ratio being, at the latter place, a fraction over 17 per cent.; at New Orleans, a fraction over 32 per cent.; and at Louisville, a fraction over 63 per cent. Of the 35 fatal cases 16 were either complicated or associated with other important affections.

The proportionate fatality in uncomplicated cases was 19 in 112, or a fraction under 17 per cent. Pneumonia uncomplicated and not associated with any other important affection, if limited to one lobe, is not a disease dangerous to life, since there were but two examples among the 133 cases analysed.

Under this head arise four questions:

a. Of complicated cases what proportion were fatal?—Of the whole number in which other affections became developed in the course of the pneumonia (21), 11 were fatal. Of 7 cases in which pulmonary tubercles co-existed, recovery took place in all save one.

b. In how large a proportion of cases in which inflammation extended over more than one lobe did death take place?—Of 11 cases of double pneumonia, the number of deaths was 8; of 57 in which it extended over two or more lobes, 19 died, the proportion being exactly one third. The fatality is thus seen to be greatest in double pneumonia. Next in order are cases in which the whole of the right lung is affected. The fatality is strikingly less when the whole of the left lung is affected, being only as one to nine.

c. Does age exert any influence on the fatality of this disease?—In the largest number of cases in the whole collection the ages were between 20 and 30, while in the largest number of fatal cases they were between 30 and 40. Age does exert an influence on the fatality, the liability to a fatal result being greater in proportion as patients approach the age of sixty—this collection containing no examples of a greater age than sixty years.

d. Does intemperance exert an influence on the fatality?—It is probably true that habits of drinking were noticed in a larger proportion of the cases in which they existed, than the absence of these habits in the cases in which the patients were temperate. Hence the results do not fairly exhibit the influence of intemperance.

2. *Duration.*—In 30 cases the shortest duration from the date of the attack to the time when the patient could be pronounced conva-

lescent was 5 days, and the longest 23 days. The mean duration was a fraction over 12 days.

In 14 of the fatal cases the shortest duration from the date of the attack to the time of death was 3 days, and the longest 20 days. The mean duration was a fraction over 10 days.

The duration in hospital cases, from the date of admission to the time of discharge, varied from 4 to 70 days. The length of stay in hospital, however, in a series of cases, does not show the length of time that the patient was necessarily detained by the disease.

IX. *Treatment.*—The objects of treatment have been the palliation of symptoms, placing the system in a condition of tolerance as regards the disturbance caused by the local affection, and sustaining the vital powers so as to obviate a tendency to death by asthenia or exhaustion, and to promote a speedy and complete recovery.

1. *Points of inquiry in regard to treatment.*—The proportionate fatality in cases in which different therapeutical measures were employed, the duration of the disease in cases differently treated, the immediate apparent effects of remedies, the almost impracticability of arresting pneumonia, and its intrinsic tendency to death or recovery, when left to itself—*i. e.* without treatment.

2. *Progress without treatment.*—A few cases in this collection illustrate the favorable progress of the disease and recovery without medical treatment, and even under most unfavorable hygienic circumstances. Recovery, favorable progress of the disease, and a brief duration, even if an entire lung be affected, do not necessarily constitute evidence of the curative efficacy of any plan of treatment which may have been pursued.

But, on the other hand, taking into view the fact that in only two cases in which the disease was uncomplicated and limited to a single lobe, did it prove fatal, a considerable number of fatal cases, when no important complication existed, and the disease did not extend to two or more lobes, should be considered as furnishing good grounds to suspect that the treatment pursued contributed to the fatality.

3. *Remedial measures.—a. Bloodletting.*—So far as any conclusions are admissible from the facts, they show that bleeding did not prevent extension of the disease to the entire lung, which occurred in 5 of the 12 cases; nor the affection of the lower lobes of both lungs, which occurred in 1 case; nor the development of delirium tremens, which occurred in 1 case; nor pericarditis in 1 case.

It did not diminish the fatality, which was at the rate of 36 per cent., being considerably larger than the rate in all the cases (26 per cent.); much larger than that at Buffalo (17 per cent.); somewhat larger than at New Orleans (32 per cent.); but falling below the rate at Louisville (63 per cent).

The analysis of cases in which bloodletting was employed furnishes no evidence that this measure affected, either favorably or unfavorably, the progress of the disease. In some of the cases it appeared to afford relief.

The longest duration of these cases, from the date of the attack to convalescence, was 30 days; and the next longest 15 days. The short-

est duration was 9 days, and the next shortest 11 days. The mean duration was a fraction under 15 days. The mean duration of stay in hospital was a fraction under 25 days. The average duration from the attack to convalescence is exactly the same as in the aggregate of the other cases mentioned here, viz., a fraction over 12 days.

b. Tartar emetic was prescribed in 12 cases, in small doses (gr. $\frac{1}{16}$ or $\frac{1}{8}$), and nearly always given in conjunction with opium or the sulphate of morphia in small doses. Palliation of certain symptoms was alone looked for through its sedative influence on the circulation and nervous system. It is fair to presume that the antimony exerted in several cases a certain amount of palliative influence. It was not given under circumstances likely to render a depressing remedy injurious, either directly or indirectly, by conflicting with supporting measures.

c. Sulphate of quinia entered more or less into the treatment in 32 cases; in 9 in doses of gr. ij, three times daily, generally in conjunction with opium in small doses, brandy, and sometimes carbonate of ammonia; in nearly all of the remaining 23 cases, in doses of gr. v, three times daily, continued for a variable period. Of the 23 cases, 3 only were fatal; all those which recovered, save 3, were uncomplicated, and the inflammation was limited to a single lobe in all the other cases save one.

It is doubtful whether any inference is to be drawn from the fatality, except that the sulphate of quinia did not exert an unfavorable influence on the termination of the disease. The immediate apparent effects were, in several instances, favorable in a marked degree; the pulse, in several cases, diminished in frequency notably under its use, a corresponding reduction in the frequency of the inspirations sometimes taking place and sometimes not.

d. Opium.—Opiates entered more or less into the treatment in 100 cases, and were either the only, or the most important, remedy in 49. In 46 of these 49 cases, the sulphate of morphia was given in doses of gr. $\frac{1}{4}$ or upwards, or opium in doses of gr. ij or upwards, every 4 or 6 hours. Of the 46 cases treated with full doses of opium, 11 were fatal, a fraction over 23 per cent. This is somewhat under the fatality, in the whole number of cases analysed, which was a fraction over 26 per cent.

So far as any conclusion from the fatality is admissible, it is certainly favorable to the treatment of the disease with full doses of opium, as compared with other methods of treatment pursued in the cases collected by Dr. Flint. Among the cases treated with full doses of opium, ending in recovery, in 12 the inflammation extended over a whole lung, or 30 per cent.; while the proportion in 110 cases treated by different methods, and including fatal cases as well as those which recovered, was only a fraction over 31 per cent.

Full doses of opium, however, do not afford a protection against the extension of the disease beyond a single lobe. In 22 of the 35 cases of recovery, the mean duration was a fraction over 11 days.

In the cases in which other remedies were added (excepting alcoholic stimulants), they were subordinate to the opium treatment. Dr. Flint has never observed more than slight narcotism produced by

large quantities of the remedy, when judiciously given, a fact which shows that pneumonia involves tolerance of full doses of opium.

e. Alcoholic stimulants, given more or less freely, and continued for a greater or less period during the progress of pneumonia, produced no apparent unfavorable effects. The facts show that, given in conjunction with opium and nutritious diet, they affect favorably the progress of the disease and diminish its fatality, and are not contraindicated by the coexistence of pericarditis or organic disease of the heart.

In conclusion, it has been recently stated that the chlorides disappear from the urine during the progress of the exudation in pneumonia, and reappear so soon as the exudation ceases. Hence, it is considered by some that the absence of chlorides is evidence that the inflammation is extending; while, on the other hand, their reappearance is a test that the inflammation has reached the limit of its extension. The conclusions arrived at by Dr. Flint, from the examination of eleven cases, are, that the absence of the chlorides may be considered as evidence that the exudation is going on, but the presence of the chlorides does not constitute conclusive evidence that exudation is not going on.

Art. 36.—*On the treatment of Pneumonia.*

By Dr. Austin Flint.

(*American Medical Times*, April 11, 1861.)

In a clininal lecture on pneumonia, are the following excellent remarks upon treatment. Two objects, according to Dr. Flint, comprehend all that has to be done:

"1. To place the patients under the influence of opium sufficiently to tranquillize the system—to render it, as it were, as tolerant as possible of the local affection, and to promote sleep. The objects embraced under this head are very important. When it is recollected that the disease kills by asthenia, all that we can do to obviate disorder, fatigue, and exhaustion, will be likely to increase the probability of recovery. Hence the value of opium in this, as in many other diseases. However we may explain the *modus operandi* of this drug, clinical experience shows its great value in the treatment of pneumonia. And it is to be borne in mind that in this, as in many other diseases, the system bears, without any narcotic effect, large doses of opium. These patients took, for several successive days, from nine to twelve grains of opium per day, without the least approach to narcotism. The good effects of this remedy must have been apparent to you in the diminished frequency of the pulse and respirations, the freedom from pain, the refreshing sleep which it procured, even while the local affection was advancing. I may repeat here, that it would be no objection to the use of opium, if it diminished expectoration in this disease, which it does not. The exudation in pneumonia does not go off by expectoration, but by absorption. The expectoration which usually occurs during the resolution of pneumonia, does not

consist of the exudation into the cells, but mainly of mucus from the bronchial tubes.

"I have offered reasons for the utility of opium; but you will bear in mind that its applicability in the treatment of this disease does not rest on the plausibility of these or any other reasons which may be given with a view to explain its utility, but on the conclusions drawn from repeated observation of its effect. It occurs to me to suggest, in connexion with the remarks which have been made respecting the probable derivation of the excess of fibrine from the waste of the tissues, whether opium may not be useful by limiting this waste; and, if so, may it not tend to limit the amount of exudation, and in this way, in fact, limit the extension of the disease? I throw out this idea simply as a casual suggestion.

"2. The second object was to support the system by alcoholic stimulants and concentrated nourishment. These measures constitute the sustaining course of treatment of which I have spoken often in connexion with various diseases. The patients got an ounce of brandy at intervals varying from two to six hours during the progress of the disease, after the commencement of resolution; then the quantity was gradually diminished, and it was discontinued when convalescence was fully declared. Essence of beef and milk, alternately, at short intervals, constituted the diet.

"Not many years ago, these measures during the continuance of an acute inflammation, would have been deemed extremely hazardous. The utility of the sustaining treatment in pneumonia, and many other affections, has become so familiar to me that I have ceased to regard it as possessing any novelty; but from the frequent expressions of surprise and doubt by practitioners who do me the honour to visit my wards, I am reminded that it is a novel treatment to many, and that all do not find it easy to shake off notions which have become firmly fixed. I shall not now dilate on the subject. You have had abundant opportunity to observe for yourselves in the cases of which I am now speaking, and in numerous other cases, not only the innocuousness, but the apparent efficiency of the free use of alcoholic stimulants and nutriment in certain cases of pneumonia, as well as of various acute affections. The safety and utility of these measures must, of course, rest on experience; but we need not be at a loss to understand, in some measure, why they are not only safe but useful. We have seen that in cases of pneumonia, in which an entire lung is solidified, sixty ounces of solid matter are withdrawn from the blood, and that the danger to life is from asthenia or exhaustion. Hence, it is the great object in such cases to support the powers of life, and this is to be done by alcoholic stimulants and nourishment.

"There is another consideration which has an important bearing on this point in the treatment. Pneumonia, in general, does not involve destructive lesions of the lung, even when it proves fatal. The lung-structure is intact. The cells are filled with exudation matter which will almost surely be absorbed if life be sufficiently prolonged. A grand object of treatment, therefore, is to prolong life until resolution begins and progresses so far that, if serious complications do not ensue, the patient is safe."

ART. 37.—*A remark on Pleurisy and Thoracentesis.* By M. ARAN.

(*Medical Times and Gazette*, Dec. 15, 1851.)

M. Louis has laid down the law, that regular, uncomplicated pleurisy, which always admits of cure, occupies the left side of the chest; and M. Aran's personal experience, extended now to hundreds of cases, entirely confirms the statement; so that, independently of any other sign than that of the pleurisy appearing on the right side, we may affirm the existence of pulmonary tubercles in 95 cases out of 100. "It is only after attentive and long-continued observation that I have adopted this opinion. Like all other physicians, I have cured patients of pleurisy on the right side, who exhibited no signs of pulmonary tubercle. But I have taken care not to lose sight of these patients, and the time has arrived when they have again presented themselves to my notice with unmistakeable signs of phthisis, if even the autopsies had not confirmed the diagnosis. I once had a patient of the most robust constitution, in whom there could not be the slightest suspicion of tubercle. Six pints of a sero-fibrinous liquid were drawn off from the right side by tapping, and the man completely recovered, and resumed his very laborious employment. This case I regarded as an exception to the general rule which I have just laid down. But six months had not elapsed before this man had died in my ward exhibiting the characteristic lesions of pulmonary tubercle."

The experience of M. Aran has taught him the futility of preferring blistering, diuretics, &c., to thoracentesis: and of thoracentesis in general, he says that he regards it as one of the greatest triumphs of our art, and one of the most powerful therapeutical agents which medicine possesses.

ART. 38.—*On the Resorption of Pleuritic Exudations.* By Dr. SKODA.

(*Vierteljahrsch. f. d. Prak. Heilk.*, Bd. 33, 1852; and *Dublin Med. Jour.*, Aug., 1852.)

The resorption of pleuritic exudations frequently takes place very slowly, because the capillary vessels in the sub-pleural connective tissue are obliterated. This may be the result of shrivelling and disappearance of the connective tissue newly formed from the exudation, as then, in consequence of the arrest of the metamorphosis of tissue between the blood and the exudation, endosmose and exosmose cannot duly take place. It is not until after the lapse of months or years, when the fluid portion of the exudation has penetrated through the false membranes investing the pleura, that its resorption occurs. In the first case, internal medicines can, of course, avail nothing, as in them we possess no means of exciting the re-formation of vessels. What has been said explains the action of iodine injected in exudations, inasmuch as, by exciting inflammation, it causes the development of new vessels, and so induces the resorption of the effusion. But this view

does not, perhaps, encourage us to the frequent employment of thoracentesis and subsequent injection of iodine; for this proceeding is by no means so safe as the corresponding operation for hydrocele. But, apart from that consideration, the injection of iodine or nitrate of silver into the pleural sac can answer no useful purpose; as, on the one hand, in consequence of the presence of the albuminous exudation, the caustic influence of these agents cannot reach the pleural sac, particularly as by the chemical combination which these substances form with the effusion, their power is altered and exhausted, so that the fluid must in the first instance be pumped out, which violent and sudden evacuation may be attended with evil consequences. But, on the other hand, in effusions of long standing, which have already attained to partial organization and shrivelling of the product of inflammation, the injection will be inefficacious, because the lung can now no longer fill the space previously occupied by the fluid exudation, especially as the investing false membranes must first be broken up by the lungs, which is not conceivable. But even if this should take place, a sudden evacuation could be followed by no favorable result, because necessarily there must be ruptures of the pleuritic adhesions and bursting of the compressed pulmonary parenchyma. Therefore, in a pleuritic effusion of long standing, it is only exceptionally that puncture is admissible, when the exudation is so considerable as to depress the diaphragm, to displace the mediastinum, and so to compress the lung that danger of suffocation supervenes. But how can the resorption of pleuritic exudations be induced? Experience shows that all those means which lower the pressure of the blood or augment the secretions, and therefore promote the separation of water from the blood, effect a diminution of the fluid effusion. Accordingly, venesections and diuretics may be indicated in cases of effusion; but these effects also occur spontaneously. In chronic exudations, which are already organized, such means will even be rather injurious, and the indication will be to employ remedies capable of dissolving solid exudations. Such remedies are iodine and mercury. The cautious employment of these means may therefore be adopted, and they are particularly suitable for external application. Professor Skoda has for some years employed these means experimentally, and has often seen pleuritic exudations rapidly diminish after the use of mercurial ointment, iodine ointments, iodide of glycerin, and black oxide of copper in the form of ointment. It is self-evident that in all chronic pleuritic effusions the diet must be good, in order as much as possible to counteract their injurious effects upon the system at large.

Art. 39.—*Case of Tracheotomy and Artificial Respiration in Croup.* By Dr. Radcliffe, Physician to the Westminster Hospital.

(*Lancet*, April 6, 1861.)

This case is interesting, in consequence of the results which followed the persevering employment of artificial respiration. The child was virtually dead when the operation of tracheotomy was performed;

and artificial respiration was persevered in for an hour and twenty *minutes* before the breathing was established. On the day following there was a fair prospect that the child would recover, and there is reason to believe that it would have recovered if it had not been for the tracheal tube having become somewhat obstructed with mucus.

CASE.—Wm. W. C—, æt. two years and five months, admitted December 29th, 1868, at half-past eleven a.m. The mother states that the child went to bed the preceding night apparently well, but awoke in the morning with great distress of breathing; a loud noise in the throat was heard, and there was frequent harsh cough.

On admission, the following was the patient's condition:—Countenance very anxious, and somewhat dusky; cough frequent, loud, and hoarse; respiration characteristically "croupy;" chest everywhere resonant on percussion; breath-sounds quite masked by the noise in the trachea; tonsils of normal size; bowels open; urine scanty; appetite indifferent; thirst only slight; skin cool and somewhat moist; respirations 32. To have a hot bath immediately, and then to be wrapped in blankets sprinkled with mustard; this measure to be repeated in the evening. Ordered six minims of dilute nitric acid in two drachms of water every half hour. Beef-tea and milk (hot) to be given frequently. The bath was followed by a marked increase of the general temperature of the surface and notable perspiration, and the colour of the face became natural. At one p.m. the cough was somewhat less frequent, otherwise there was no great change. Respirations 36; food and medicine taken with difficulty.

During the night the cough and croupal inspiration became louder, and at five a.m. on December 30th the respirations were 60 in the minute; the skin was cold and purple, and the countenance indicated great distress. Repeat the bath, and apply a mustard poultice to the throat and chest.—Ten a.m.: The symptoms have greatly improved, and there is much less distress. Skin warm; lips red; restlessness much diminished; respirations 40. Repeat the bath.

In the course of the afternoon a relapse occurred; the temperature of the surface fell, the respirations rose to 46, the tracheal sound became louder, the cough more frequent, and there was increased restlessness and anxiety of countenance. At nine p.m. the respirations were 60 in the minute, and the bath had failed to produce its usual good effect. At half-past eleven p.m. the respirations were 52, and the child was in every way much worse; and at twelve p.m. the respirations could hardly be distinguished, there was no pulse, the skin was cold and clammy, and the lips quite blue. Tracheotomy was at once performed by Mr. Slaytor, the house-surgeon, and an opening was effected into the trachea, with the loss of scarcely half a drachm of blood. The forceps were introduced, and the opening made patulous, but no signs of returning animation appeared, and accordingly artificial respiration was immediately resorted to by Mr. John March, and kept up steadily, though for a long time the case seemed hopeless. At the end of an *hour and twenty minutes*, however, during which time the artificial respiration had been unceasingly kept up, the pulse and breathing gradually returned, the tube was introduced, the child was laid before the fire, and an enema of wine administered.

At a quarter to two a.m. (31st) the skin was warm and the lips red; there was no cough; the respirations were 72 in the minute. An enema consisting of half an ounce of port wine, a drachm and a half of brandy, and two

ounces of beef-tea was ordered to be given at once, and repeated every three hours. The tube was frequently cleaned out with a feather, and at first much flaky mucus was brought away; but this soon ceased, and during the next twenty-four hours but little matter could be removed, although every care was taken to clear the tube. The child was wrapped in blankets, and kept near the fire. It lay very quiet all day, but could not bear to have its arms covered up by the clothes. Gradually the temperature of the surface fell, the face became livid, and at half past twelve a.m. (January 1st) death took place, after two or three severe struggles for breath, twenty-four hours after the performance of tracheotomy. The respirations, three quarters of an hour before death, were 36 in the minute.

Necropsy.—A thin, tenacious, pseudo-membrane lined the trachea from the site of the operation downwards to the bifurcation of the tube, and extended slightly beyond it into each bronchus. The bronchial tubes generally were very red, and filled with a thin, red serum. The lungs were much engorged, but everywhere crepitant; and there were no adhesions of the pleuræ. The larynx itself was free from any remains of the exudation, which were only discovered *below* the site of the operation. The heart was healthy, and its cavities nearly empty.

ART. 40.—*On the pathology of Asthma.* By Dr. G. H. KIDD.

(*Dublin Quarterly Journal of Med. Science*, May, 1861.)

In this paper Dr. Kidd labours to show,—

1st. That during the paroxysm of asthma, the chest is distended to the greatest possible extent.

2d. That all the muscles of inspiration are in spasmodic action (tonic spasm).

3d. That the bronchial muscles are muscles of inspiration, and associated in the spasmodic action with the other muscles of inspiration.

4th. That breathing is carried on by bringing a voluntary effort to aid the muscles of expiration; and that as soon as this is relaxed, the muscles of inspiration, like so many stretched bands of India-rubber, distend the chest again.

Dr. Kidd then proceeds to trace this spasmodic action to its cause. The "simplicity" of the theory, that the paroxysm depended solely on the spasm of the bronchial muscles, has too often prevented the true cause of the disease being recognised. The following facts may be referred to, as showing that the spasm arises from some morbid action in the medulla oblongata:—

1st. The fact that the spasm affects an entire group of muscles. Now, Schroeder van der Kolk has shown that muscles which are associated in action are supplied by nerves arising from special groups of mutually associated and connected ganglion-corpuscles. Disorder of this group would then manifest itself in the entire class of muscles.

2d. Van der Kolk has also shown that the skin covering parts moved by muscles, is supplied with sensitive nerves arising from the same segments of the spinal centre, as the motor nerves of those

muscles arise from.* Now, Dr. Salter has remarked, as an almost universal premonitory symptom of asthma, that there is *itching* of the skin under the skin, over the sternum, and between the scapulæ. This, it is evident, is a subjective sensation, and indicates an irritation existing at the roots of these nerves.

3d. Paroxysms of asthma are observed to occur in cases of acute hydrocephalus, as in a case mentioned by Dr. Salter, and in one mentioned by Dr. Graves, where there were also general convulsions. In persons liable to epilepsy, recurring at regular intervals, the asthma occasionally take the place of, and serves as a substitute for, the epileptic fit.

4th. The state of the patient preceding the fit [illegible] an affection of the nervous centres. In one there [illegible] ration, in another mental depression. A patient [illegible] awakened from sleep by convulsions in the [illegible] as the asthmatic fit is developed, the convulsions [illegible] cease.

5th. The exciting causes indicate the [illegible] applied to the instep will cause an [illegible] with a loaded rectum: in a third, [illegible] and in another sudden emotion [illegible] check the paroxysm, even when [illegible]

From all these circumstances [illegible] on a morbid state of the medulla oblongata [illegible] manifests itself by throwing the [illegible] into spasmodic action.

ART. 41.—*Case of* [illegible]
By [illegible]

(Journal f. Kinderkrankheiten [illegible]

CASE.—During an epidemic [illegible] child, three years of age, [illegible] four weeks. The paroxysms [illegible] Until ten days before [illegible] and playing, notwithstanding [illegible] and appetite and sleep [illegible] in, and a mucous rale was heard [illegible] continued for some [illegible] surface of the body [illegible] not be opened [illegible] the upper part of the sternum [illegible] neck was occasionally [illegible] backwards [illegible] the distance [illegible] and lines with [illegible] also slightly [illegible] found [illegible] mous [illegible] were, between [illegible]

* There are [illegible] edition of [illegible]

measured nine and a half Rhenish inches; injected by dark vascular branches, it was transparent, exceedingly light, tense and elastic, the raphe dividing it into two equal semicircles. The penis had almost disappeared behind it. The thighs, as well as the knee-caps, exhibited only slight swelling, and the legs were entirely free from it. The arms were considerably swollen as far as the wrists, the hands and fingers not participating in this. The drowsiness and feverishness had passed away; there was no dyspnœa, and auscultation exhibited puerile respiration without *râle*. Camphor liniment was applied to the surface, and fomentations to the scrotum, which became distended to bursting of the skin; and in a short time the emphysematous swelling disappeared, the child quite recovering its health afterwards.

The author has witnessed many epidemics of pertussis, as well as all kinds of accidents produced by it,—as convulsions, excessive epistaxis, effusion of blood under the conjunctiva, meningitis, &c., and he has observed in several children, when the cough has been violent, the production of œdematous swelling of the face, eyelids, and forehead; but he has never before seen an example of general emphysema resulting from this cause. P. J. Frank relates a case very similar in its circumstances to the present one.

ART. 42.—*On the question of Amputation for Diseased Joints in cases of Phthisis.* By (1) Dr. RICHARDSON, Physician to the Royal Infirmary for Diseases of the Chest, and (2) Mr. QUAIN, Surgeon to the University College Hospital.

(*Medical Times and Gazette*, Nov. 24 and Dec. 22, 1860.)

The common view is against operation in these cases; the theory being that the discharge from a diseased structure acts as a derivative, and prevents the progress of more fatal disease in the lungs. In Dr. Richardson's case, Mr. Lawrence, of St. Bartholomew's Hospital, had refused to operate; and yet, after two years' further suffering and exhaustion, the operation was performed with a most satisfactory result —a virtual cure. Commenting upon this case, Dr. Richardson says, "There are two classes of cases in which tubercle may be connected with diseases of joints: in the one class the patient presents evidence of hereditary scrofulous and phthisical taint, and the local manifestations of disease are conjoint indications of constitutional disorder. Whether in this case an operation is really advisable is difficult to say. But there is a second class, of which the present case is an example, in which the development of phthisis occurs purely from confinement in an impure air, and where the disease of a joint is the result of an injury. Here there is no common or constitutional cause for the two disorders; and here, whenever such diagnosis can be determined, the removal of the diseased limb should obviously be the first point of practice, and specially so, if it be clear that the limb itself cannot be saved, and if its presence is the cause of constantly exhausting discharge and pain." Dr. Richardson says, also, that the case related below is the third of the kind which has fallen under his notice. Mr. Quain's case is a pendant to Dr. Richardson's, the operation having been performed in consequence of the encouragement therein afforded.

1. *Dr. Richardson's case.*—The patient is a young man, twenty-one years old. He is a lever-escapement maker, and has been much confined at his

business in-doors. He has been ill four years; and we learn from him that his father died from an accident, that his mother is living and well, and that there is no special hereditary taint in his family. His habits have been temperate; his face is expressive of debility, and his body is deficient in flesh.

On the 21st of November, 1856, having been previously in good health, he was seized with giddiness, while sitting at his work, and fell off his stool insensible. He remained ill with brain symptoms for fourteen days, but eventually recovered. He took cold a fortnight afterwards, and then commenced to suffer from cough. From this time for twelve months he suffered from hacking-cough, which did not keep him from work, but was attended with night-perspirations and loss of flesh.

On the 24th of July, 1857, he got a sprain in the left ankle, and the joint afterwards took to swelling, very slowly, with great pain and hardness. This rendered him more restless and anxious even than the cough.

On October 16th, 1857, he was admitted into St. Bartholomew's Hospital, under Mr. Lawrence; he remained there nine months, during six of which he was in bed. Within one week after his entrance into the hospital, hæmoptysis came on and continued at intervals for a month, after which it subsided.

The foot was first treated by leeching, afterwards by poultices, which were continued for six weeks, and then a point having appeared anteriorly, an incision was made, but nothing followed.

Internally he had a mixture for his cough, and cod-liver oil, with good diet.

On three different occasions amputation of the foot was contemplated, but each time the operation was deferred, owing to existing disease in the lungs.

He was discharged at the end of nine months uncured.

The patient then passed under the treatment of a Homœopathic practitioner, who put the foot in a heavy iron-splint (which weighed six pounds) with an adjusting screw; by means of the screw attempts were made every fourteen days at extension.

The joint, during this time, was more enlarged than ever, and presented four open wounds. The main treatment consisted in endeavouring to put the foot straight, the toes being directed somewhat downwards. A liniment was also used for the foot.

He was subjected to these measures for twelve months, during which time he grew worse, the cough increased, there was more expectoration, the night-sweats were much aggravated, and for many nights he lay entirely sleepless from pain in the joint.

On November 25th, 1859, he was admitted to the Royal Infirmary for Diseases of the Chest, under my care; the cough was then very severe; there were evidences of tubercle in both lungs, and the tubercular crepitation in the left lung was large and moist. The left ankle was entirely disorganized: on the anterior surface were four deep and wide sinuses, which communicated with the articulation.

The heavy boot was withdrawn; as much exercise out of doors as possible was ordered; cod-liver oil and one grain of quinine were given three times a day; and five grains of gallic acid with one third of a grain of morphia every night—with full diet.

He continued under this treatment until February 1st, 1860, the lung disease not becoming materially worse, but the anxiety from the pain in the foot, together with the discharge, were increased.

On the 2d of February, 1860, Mr. Wm. Adams saw the case in consultation,

and on the 16th he removed the diseased foot by Pirogoff's operation at the Great Northern Hospital. The operation was performed under chloroform.

At the end of the first fortnight the wound was nearly closed, but there was a little discharge at the side for six months.

Immediately on the removal of the foot the chest symptoms, and all the signs of debility, began to improve, and on June 18th an examination of the chest showed dulness on percussion on the left side in the apex of the left lung; but an entire absence of crepitation from both lungs, and of all the acute signs of phthisis. At this date the patient had resumed his old employment, and continued at it until the latter end of September. He could walk on the stump and do a good day's work.

At the latter end of September he again began to cough, and on the 18th of October he spat a little blood.

November 3d.—At the present time the condition of the patient is as follows:—The stump is entirely healed, and presents a perfect cushion, he can bear his whole weight upon it without any difficulty or pain; he sleeps well, but perspires at night; there is some emaciation; the conformation of the chest is good, but there is deficiency of respiration on the left side; there is marked dulness on percussion on the left side in the subclavicular region, and also over the lower part of right lung anteriorly; there is further dulness, not so marked, on both sides of the chest posteriorly; on auscultation, there is increased vocal resonance on the left side in the subclavicular region, with deficient respiratory murmur, while lower down, towards the nipple, there is small dry crepitation. There is the same kind of crepitation in the lower anterior portion of the right lung.

The patient is again taking cod-liver oil, quinine, and the opiate gallic acid pill.

2. *Mr. Quain's case.*—T. S—, æt. 21, was admitted, under the care of Mr. Quain, on October 2d, 1857. He was a banker's clerk, and had lived in London seven years. He had four sisters and two brothers all in good health. When six years of age he had inflammation of the left-knee joint, which was supposed to have been caused by an injury. It was very much swollen and painful, and was treated by leeches and iodine plasters. The joint got apparently well, and he was not again troubled with it until he was ten years old, when, having again hurt it, it became painful and troublesome. About seven years ago (when at the age of 14) the knee became contracted, and an iron splint with a screw was applied. The tendons of the knee-joint, as well as the tendo Achillis, were divided. The limb subsequently became straight, and he could put the heel to the ground. In October, 1856, one year before, he first had marked symptoms of phthisis (hæmoptysis, &c.), and at this time, too, the knee again became troublesome, an abscess formed below and a little to the inner side of the patella. This was opened, and subsequently several other openings were made to let out matter. The joint got worse, and there was a good deal of discharge from the sinuses. On admission the ends of the bones at the joint were enlarged. The natural contour of the joint in front was lost, and the popliteal space was as if filled with indurated tissues. There were several ulcerated openings, one just above the articulation on the outer side, and one on each side of the head of the tibia; one was situated behind over the head of the gastrocnemius muscle. There was also an ulceration over the upper part of the tibia. The limb was much wasted. Dr. Walshe examined the chest, and found that the lungs were the seat of extensive tubercular disease.

On October 22d, chloroform having been given, Mr. Quain removed the limb by amputation through the middle third of the thigh.

On November 3d he was about on crutches, and on the 9th the wound was quite healed. The patient recovered quickly from the operation.

On examining the joint after removal no synovial membrane was found. The cartilage over the lower end of the femur was gone, and the cancellous structure was exposed, but appeared free from infiltration. The surface of the tibia corresponding to it was ulcerated and soft, the cartilages having been destroyed. The whole of the shaft of the tibia and of the fibula were much softer than natural, and appeared to be infiltrated with oily matter. The inter-articular cartilage was entire, and the crucial ligaments sound. The opening in the popliteal space was the only one which communicated with the interior of the joint.

ART. 43.—*On the action of Hydrochloric Acid in Phthisis.* By Dr. COTTON, Physician to the Hospital for Consumption at Brompton.

(*Medical Times and Gazette*, Nov. 17, 1860.)

Dr. Cotton reports the effect of hydrochloric acid upon twenty-five in-patients in the Brompton Hospital. Of these patients seventeen were males and eight females. Their respective ages varied from sixteen to forty years. Ten were in the first stage, four were in the second stage, and eleven in the third stage of the disease. In twelve instances the mineral acid was given alone; in thirteen cases it was combined during part of the time with cod-liver oil. The dose of the acid varied from ten to fifteen minims of the dilute hydrochloric acid of the Pharmacopœia, mixed with peppermint-water and administered three times a day. In three cases it was tried for only a fortnight, but in all the rest it was continued for periods varying from four to thirteen weeks.

Of the twenty-five patients, eleven *greatly improved*, six *slightly improved*, and eight received *no benefit*. Of the *greatly* improved cases, seven were in the first, two were in the second, and two in the third stage. Of the *slightly* improved patients, one was in the first, one in the second, and four in the third stage. Of those who received *no benefit*, two were in the first, one in the second, and five in the third stage.

Sixteen patients gained in weight, eight lost weight, and in one there was no alteration. The changes in weight were particularly noticed in reference to the cod-liver oil. In six cases, although no oil was taken, there was a great increase of weight (an average of six pounds to each patient); but in all the rest, who either did not or could not take the oil, there was more or less loss of weight. Without reference to the oil, however, those *greatly* improved were found to have increased in weight, although such increase bore no direct proportion to the amount of improvement, some who had gained the least having been quite as much benefited as any of the rest.

The improvement was in several cases very marked indeed, both locally and generally; the disease appearing to be arrested, and the patients declaring themselves "quite well." This was especially noticed in three cases, in one of which the disease was already in the second stage; in two of these no cod-liver oil had been taken; in one this remedy had been occasionally added to the acid. Two other per-

sons, who had actual vomicæ, also improved very decidedly, the pulmonary secretion greatly diminishing, all the general symptoms subsiding, and the patients ultimately leaving the hospital materially improved in every particular. Of the seventeen more or less improved cases seven took no oil, while in ten it was occasionally taken in combination with the acid; in two of the latter cases the oil seemed to make little, if any, difference; but in at least four it appeared to contribute materially to the general result.

In five of the patients, who were obviously benefiting under the hydrochloric acid, the experiment was made of changing it temporarily for an equivalent dose of *liquor potassæ*. In one of these there was no marked effect, the patient appearing to do equally well under either acid or alkali; but in the other four the change was more or less prejudicial, the patients unhesitatingly affirming that they were progressing less than when taking the acid. Much care was used in making this observation, the patient's own words being, in each case, recorded.

In very few instances did the hydrochloric acid at all disagree. Now and then a little gastric pain was complained of; but in no case was it necessary permanently to abandon its use. As a general rule, the appetite greatly improved under its administration.

"For some years past," says Dr. Cotton, "I have frequently prescribed for phthisical patients the mineral acids, in conjunction with gentian and other vegetable tonics, but I became anxious to examine, as far as possible, the separate influence of the acids. The frequency with which consumptive persons suffer from dyspepsia—the fact that the free acid frequently occurring during healthy digestion is the hydrochloric together with the well-known solvent effect of this acid upon the plastic constituents of the food pointed rather to it as the proper object of the experiment, than to either the nitric or sulphuric acid. I have no reason, however, to think that either of these acids, or the compound known as the nitro-hydrochloric acid, may not be equally beneficial; but upon this point I hope to make further observations.

"After making due allowance for other influences, so favorably brought into operation at the Consumption Hospital, I cannot help coming to the following conclusions:

"1. That the mineral acids are well suited to a large number of phthisical cases.

"2. That the dilute hydrochloric acid especially, in doses of ten or fifteen minims twice or thrice a day, is an important auxiliary to other treatment, and may oftentimes be usefully employed, either alone or in conjunction with other mineral or vegetable tonics."

ART. 44.—*On the action of Liquor Potassæ upon Phthisis.* By Dr. COTTON.

(*Medical Times and Gazette*, April 13, 1861.)

In this article, Dr. Cotton reports upon the effects of a treatment by a pure alkali (fifteen drops of liquor potassæ, two or three times

a day) in twenty-five in-patients at the Brompton Hospital. Of the patients ten were males and fifteen females; their ages varied from fifteen to forty years; eight of them were in the first stage, four in the second stage, and thirteen in the third stage of the disease.

Of the twenty-five cases, two slightly improved; one greatly improved; and twenty-two appeared to be uninfluenced by the treatment. In only one instance, however, did it disagree with the stomach; in all the rest it seemed to be inoperative either for good or harm. In the two slightly improved cases quinine and iron were afterwards administered with a more satisfactory result; and in the one greatly improved, the liquor potassæ was changed for a vegetable tonic, without any alteration in the general progress. Eight patients gained slightly in weight; nine lost weight; and eight experienced no change in this particular.

Of the twenty-two patients in whom the liquor potassæ seemed inoperative, nine improved under a change of medicine, some of them, indeed, to a marked extent; thirteen, however, experienced no amendment under the like change, being apparently in a condition of disease hardly amenable to any kind of treatment.

With this result, it may be interesting to couple a statement contained in the preceding report, that four patients who have been deriving benefit under the influence of *dilute hydrochloric acid* unhesitatingly declared that they progressed to a much less extent during the brief period in which this remedy had been experimentally changed for *liquor potassæ*.

In the days of some of our professional ancestors, liquor potassæ enjoyed a considerable reputation as a remedy in phthisis, from its supposed so-called "deobstruent" action. Of late years, however, it has fallen comparatively into disuse, and is not often prescribed, except perhaps to meet an occasional complication.

To these experiments, as well perhaps as to some which have preceded them, it may possibly be objected that the period of trial was not sufficiently prolonged. From a conviction, however, that the time spent within an hospital is too valuable to the patients to be unnecessarily sacrificed to experiment, it has always been Dr. Cotton's habit not to persist with any one treatment for a longer period than two or, at most, three weeks, whenever it appeared that the patient was deriving no benefit, or when it seemed probable that the use of some other medicine might be followed by a happier result.

It would be foreign to the object of this communication to enter upon the action of any of the salts, either of potassa or the other alkalies. Dr. Cotton remarks, however, that for certain dyspeptic complications of phthisis, several of these rank very highly as remedial agents.

From the preceding observations, coupled with the results already obtained from the use of hydrochloric acid, as recorded in the last article, the author thinks we may fairly arrive at the following conclusions:

1. That liquor potassæ, in moderate doses, rarely disagrees with consumptive patients, but is quite as rarely productive of any good effect.

2. That the so-called tubercular *crasis* is very much more likely to be relieved by the mineral acids than by the alkalies.

ART. 45.—*Results of the trials of the Hypophosphites in the treatment of Phthisis.* By Dr. J. RISDON BENNETT, Physician to St. Thomas's Hospital.

(*Medical Times and Gazette*, April 27, 1861.)

The results of this mode of treatment in Dr. Bennett's hands appear to be no more encouraging than those already arrived at by Dr. Quain. Twenty cases are adduced in these papers, and of these there were only nine in which the disease did not steadily advance while under treatment, or in which there was the least evidence of improvement. Of these nine, four only manifested any decided improvement, of the permanency of which, however, Dr. Bennett has no proofs in any one instance.

ART. 46.—*Emboli of the Pulmonary Artery.* By MM. TROUSSEAU and DUMONTPELLIER.

(*British Med. Journal*, Feb. 23, 1861.)

MM. Trousseau and Dumontpellier have arrived at the following conclusions, as the result of a lengthened series of researches on the subject of emboli of the pulmonary artery:

1. Fibrinous obstructions of the pulmonary artery are lesions of very common occurrence.

2. Spontaneous coagulations in the pulmonary artery, formed *in situ*, may generally be distinguished from migratory clots derived from the peripheral venous system.

3. There are thus two varieties of pulmonary coagulations—one *primary*, due to some disease of the lung, such as pneumonia, œdema, apoplexy, &c.; and the other *secondary*, resulting from the migration of a peripheral venous clot.

4. Every condition of the system which causes an increased amount of fibrine in the blood is favorable to coagulation.

5. Local causes of a mechanical nature may act as determining causes.

6. Organic diseases of the heart are most influential in inducing obstructions of the pulmonary artery, partly by the general cachectic condition of the system which they induce, and partly by the mechanical obstacle which they offer to the pulmonary circulation. ('L'Union Médicale,' Dec. 13th, 1850.)

These conclusions are opposed to the opinions of Virchow, who would make all coagulations in the pulmonary artery depend upon the impaction of a clot detached from vegetations on the lining membrane of the right side of the heart, or from some part of the peripheral venous system. In the 'Gazette Médicale de Paris' for January 5th, 1861, a case of obstruction of the pulmonary artery is recorded, where there was contraction with incompetence of the

mitral valve, and likewise pneumonia, pulmonary apoplexy, and œdema. Here there was every reason to believe that the obstruction was not due to the impaction of the plug. The obstruction to the circulation through the left side of the heart led to the formation of a large fibrinous clot in the left auricle, which was found adherent after death. This offered an additional obstacle to the onward progress of the blood, the result of which was, first, œdema of the lungs, and then pulmonary apoplexy. This extravasation of blood completely arrested the capillary circulation, and caused a stagnation, first, in the smaller, and then in the larger arterial twigs; the clots gradually assuming a fibrinous character. Such appeared the most probable interpretation of the phenomena of the case.

ART. 47.—*On the connection of certain Pulmonary Diseases with primary anomalies of the Costal Cartilages.* By Dr. W. A. FREUND.

(*Amer. Med. Times*, Aug. 11, 1860.)

The following abstract of Dr. Freund's work on this subject ('Der Zusammenhang wisser Lungenkrankheiten mit Primären Reppenknorpelanomalien; mit Tafeln,' Erlangen, 1859) is by Dr. Jacobi, of New York.

"Formerly it was considered to be a general rule that the viscera should be the causes of the configuration of the surrounding walls. In contradiction to this general belief, Virchow has pointed out, in the past few years, the importance of the tribasilar bone in shaping the brain, and some other facts, as, for instance, dilatation of the urinary bladder resulting from deficient contractility and chronic expansion of the abdominal walls. Intestinal catarrh, and the acute meteorism of hypochondriacs and hysteric women, from the very same cause, will also show that the walls are, in some single instances, known to have a great influence in forming the contents. Dyspnœa has been observed not only to follow extensive combustion of the skin of the thorax and contracting cicatrices, but to be sometimes the effect of the largeness and weight of the female breasts; some thoracic muscles, when paralysed, have been known for some time to impede regular respiration, and have, therefore, been the object of local galvanization; curvatures of the vertebral column may give rise to induration of the pulmonary tissue, suffocative catarrh, and have even been said to give immunity from tubercles; and some old authors, as Platerus and Swammerdam, ventured even to think of the influence cartilages might possibly have on the inclosed viscera. For it is true, and fully proved by our author, that healthy respiratory muscles, influenced by powerful nerves, will be powerless whenever their points of insertion, the ribs, are altered in their physical quality and mobility. The costal cartilages, particularly the first, have a great influence on the normal extension and motions of the ribs, and are the principal regulators of the expansion of the lungs and thorax; the latter of which is always, under normal circumstance, perfectly filled by the former.

"The result of the author's investigations on the living and dead is this, that many cases of two very common pulmonary diseases have

their first origin in a morbid condition of the costal cartilages:—viz., 1st, the idiopathic, mostly hereditary, and in the majority of cases chronic tuberculosis, generally found first in the apex of the lungs; and 2d, the idiopathic emphysema, which is first found, generally, on the anterior superior margins of the lungs, is commonly observed to come on slowly and progress gradually, and is known to be sometimes hereditary. The morbid condition of the costal cartilages alluded to is their abnormal shortness, produced by premature ossification, which is sometimes a vitium primæ conformationis, and has been observed even during fœtal life, but more generally an anomaly in the development of the infantile age, and is very apt, like other qualities and anomalies of the osseous system, to be propagated by inheritance. As well in the commencement as in later stages of pulmonary tuberculosis, in cases having their seat first in the apex of the lungs, Dr. Freund has found the first costal cartilage to be badly developed, particularly as to length, so much so, that its length was reduced to two centim. two mill., while the normal measures are the following:

Length of the	first	costal cartilage in the	male,	3c. 8m.; in	female, 3c. 1m.
„	second	„	4c. 3m.	„	3c. 9m.
„	third	„	4c. 9m.	„	4c. 6m.
„	fourth	„	5c. 3m.	„	5c. 1m.
„	fifth	„	6c. 3m.	„	5c. 9m.
„	sixth	„	8c. 2m.	„	8c. 2m.
„	seventh	„	12c. 2m.	„	12c. 2m.

"We add at once, that deficient development of the second and third costal cartilages has fully the same influence as abnormal shortness of the first on the function of the thorax. It is their shortness principally that produces the *habitus phthisicus* of authors. According to the seat of premature ossification of the costal cartilages, Dr. Freund makes the following distinctions:—1, primary symmetric stenosis of the superior part of the thorax; 2, primary asymmetric stenosis of the superior part of the thorax; 3, primary stenosis of the middle part of the thorax; 4, immobility and loss of function of the superior part of the thorax, by exterior ossification of the first costal cartilage, which has, besides, been shortened before. This process is observed in the first cartilage only, begins in its superior anterior part, and progresses to its posterior side, and thus enveloping the normal cartilage with an osseous covering, impedes mobility and torsion. This latter anomaly has been taken to be the result of the inflammatory processes inside the thoracic cavity. But such is not the case, as it always begins in front of the cartilage, is observed where no pleurisy has ever been met with, and a long time before any symptom of tubercles can be discovered; the habitus phthisicus and deficient capacity of the lungs preceding the deposition of tubercles and the development of phthisis for many years. Shortening of the second and third cartilages is most unfavorable; the superior part of the thorax undergoing its fullest and most rapid development after the years of puberty, and the general development suffering largely from any disproportion, tuberculosis is most frequent between sixteen and thirty years of age. Inspection, palpation, and mensuration

will prove sufficient to make a correct diagnosis of the said anomaly; the akidopeirastic method of A. Th. Middeldorpff (examination by means of a quickly introduced needle to learn the general condition as to hardness, &c.) will, as it is easy to be applied, support those named before. Our author has examined eleven cases in which tuberculosis was cured. There were cicatrices in the apex, and other signs of former inflammations, and calcareous tubercles, while the remaining tissue was either normal or emphysematous. The cure was effected by spontaneous formation of a false joint in the junction of the first costal cartilage and the manubrium sterni; by the rupture of the firm ligaments mobility being increased, respiration easier, and oxygenization of the blood improved. Wherever perichondritis of the first cartilage is observed, it requires the utmost care, like pulmonary congestion itself. Leeches, mercury, iodine, proper diet and posture, and absolute quiet are indicated, in order to prevent osseous deposits. (Older authors recommend, in many cases of tubercular phthisis, issues on the arms, and even the application of the actual cautery.) Appropriate gymnastic exercise, strengthening of the respiratory muscles by local Faradization, with particular care not to increase congestion, omission of any kind of stimulant nutriments, &c., &c., are necessary. Resection of ribs and costal cartilages has been performed many times for surgical purposes; but it is uncertain whether the first costal cartilage could be safely separated from the sternum, the more so, as all the operations alluded to give rise to pleuritic exudations.

"The idiopathic pulmonary emphysema is the result of other pathological changes of the costal cartilages. From about the sixteenth year up to old age, sometimes in apparently healthy, sometimes in decrepid individuals, all the costal cartilages show a dirty yellow colour, and become looser in their structure. This rarefaction of the cartilaginous tissue is combined with increased size of the cartilage. The last effect of this alteration is well described by the author as a 'partially progressive' and a 'general immoveable dilatation of the thorax.' Emphysema is the real consequence of the lungs being closely adjoining the dilated thorax. At the same time the triangular muscle, by its attempts to effect the expiratory movements of the thorax, is immensely increased in size. These latter changes may be found in early life, and thus emphysema is apt to be also a hereditary disease."

(c) CONCERNING THE CIRCULATORY SYSTEM.

ART. 48.—*Remarks on the cause of the Closure of the Valves of the Heart.* By Dr. MARKHAM, Physician to St. Mary's Hospital.

(Proceed. of Royal Med. and Chir. Society, March 12, 1861.)

Dr. Markham looks upon the usually received accounts of the mode of closure of the heart's valves as unsatisfactory, and incapable of fully explaining the phenomena attending it. The closure is effected during different periods of the heart's action, and may be divided into two

stages. During the first stage (*i. e.* during the ventricular diastole) the valves gradually rise upwards towards each other, *pari passu* with the distension of the ventricles, so that their free borders come into loose contact. The second stage corresponds with the ventricular systole, whereby the valves are suddenly and forcibly brought into firm and perfect contact by the pressure of the blood.

The author considers that a satisfactory explanation of the cause of the first stage of this closure has not yet been given. The usually received explanation is that the blood during the ventricular diastole raises the valves up towards each other. But this is manifestly incorrect, because the pressure of the blood passing from the auricle to the ventricle *must be* as great upon the auricular as upon the ventricular surface of the valves; it is, in fact, greater.

On investigation, Dr. Markham has satisfied himself that the valves are raised towards each other during this first stage of their closure by the agency of elastic tissue, this elastic tissue being so disposed in the valves as to act in a manner at once most simple and effective. The auriculo-ventricular and the semilunar valves have all essentially the same structure. They are formed of elastic membrane and inelastic white fibrous cords. In the case of the auriculo-ventricular valves as observed in a bullock's heart, a thickish layer of elastic membrane may be readily dissected from the auricular surface of the valve, being loosely attached, except at the free edge of the valve, where it becomes blended with the under layer. This elastic membrane is retractile in all directions, but its fibres seem to run chiefly in a direction from the attached to the loose border of the valves. The lower (ventricular) surface of the valves may be said to consist of white fibrous cords—the prolongations into them of the chordæ tendineæ, united together by elastic tissue; the lower border of these cords projecting from the under surface of the valves, giving them a furrowed appearance.

In consequence of the disposition of the elastic fibres, the free borders of the valves have a tendency, when their elastic tissue is brought into play, to approach their attached borders, and in the direction of the auricular surface of the valves. At the end of the ventricular systole the valves are pressed down into the ventricles and lie flat against the inner walls, and the elastic tissue is put on the stretch. Then, during diastole, as the blood flows into the ventricles, the weight of the valves is diminished, and so the elasticity of the stretched elastic membrane is permitted to come into play. This contraction of the elastic tissue causes the closure of the valves during the first stage referred to.

Any one may readily satisfy himself that no other explanation of the phenomenon is possible. When the auricles are removed from the ventricles, *the coagulated blood carefully removed*, and water poured into the ventricles, it will be seen that the valves (if healthy) not only rise up towards each other as the water flows in, but that they remain in contact when the current is arrested, and will, if depressed in the water, again rise towards each other when the pressure is removed. As the specific gravity of the valves is considerably

greater than that of blood, it is evident that no other moving force than that of elastic tissue can be in action here.

Exactly the same disposition of parts occurs in the semilunar valves, with this necessary difference—that the elastic layer is spread over their *ventricular* surface. The object is here manifestly the same as in the former case; namely, to assist in drawing the valves away from the arterial walls, so as to put them in a position of being readily brought together at the instant the ventricular systole ceases.

These facts may, perhaps, explain some points in diagnosis which have hitherto puzzled the auscultator; for instance, the cause of a cardiac murmur heard during life in cases where the valves have been found, after death, to all appearance competent. In such cases we may fairly suppose that the elastic tissue is impaired, and thus regurgitation permitted at the commencement of the ventricular systole. We may also assume that to *prove* the capacity of the auriculo-ventricular valves for effective closure, we must try them, as above described, by removing the auricles and filling the ventricles with water.

Art. 49.—*On the influence of change of posture on the characters of Endocardial Murmurs.* By Mr. Sydney Ringer.

(*Edinburgh Medical Journal*, Feb., 1861.)

After a careful examination of a large number of mitral regurgitant, aortic obstructive and regurgitant murmurs, and one case of mitral obstructive, the following general proposition was found to hold good,—namely, that endocardial murmurs are louder, harsher, and lower pitched in the lying than in the sitting or standing posture. One case of aortic obstructive disease differed from what is stated above, in being louder in the sitting posture. One case of mitral regurgitation and aortic obstruction was also an exception: this case will be again noticed further on. Excluding these two exceptions, the above-given proposition was found to hold universally good.

These variations can be caused by either some alteration in the valves or part causing the murmur, or to some alteration in the force of the blood. It seems probable that it is due to the latter cause, and that the increased intensity and harshness, with the lowered pitch of the murmur, is due to the blood being then impelled with greater force. For, firstly, if an aorta be tied to a tap, and a murmur produced by a piece of twine tied round it, by increasing the force of the current, the murmur undergoes the alterations above stated; and, secondly, the force of the heart's contraction *is greater* lying than sitting, and sitting than standing, whilst the closest relationship exists between the frequency (*i. e.* force) of the heart's impulse and these alterations in character of the murmur. It is well known that the frequency of the pulsations of the heart are increased in the sitting over the lying, and the standing over the sitting posture. This increased frequency is accompanied with a diminution in the force of the heart's contraction; moreover, the diminution in force is in proportion to the increased frequency. This conclusion was

arrived at, first, by judging of the force of the radial artery by the fingers, and was found to hold good in all the subjects tried, with one exception, in whom no difference could be detected; but in this case no alteration in the frequency of the pulse was caused by an alteration in the posture of the patient. Secondly, as the above was a rather inaccurate method of judging, the following mode was adopted:—Patients with visible and tortuous arteries were examined in the different postures, when in every case the visibility with each impulse of the heart was decidedly less in the standing than in the sitting or lying postures. It may be objected to this, that visible arteries occur mostly in persons suffering from aortic regurgitant disease, and that, as gravitation would act more strongly in the sitting than in the lying posture, more blood would flow back into the heart; consequently less would be propelled, and the visibility would be diminished.* But the same diminution in the visibility of the artery occurred in patients who were free from aortic disease. Moreover, in those cases in which aortic regurgitation occurred, there was found to be a diminution of the visibility of the pulse in the standing over the sitting posture, in both of which postures the effects of gravitation are the same on the heart. It is thus probable that the rapidity of the circulation is much the same in all the different postures.

Having thus shown that the increased frequency and force of the heart are somewhat in inverse proportion, it remains to be shown what connection there is between the frequency of the heart's impulse and the alterations in the characters of endocardial murmurs above described.

1. A woman presented herself with both mitral regurgitant and aortic obstructive murmur. In this woman the pulse was the same in frequency in both the sitting and lying postures. The murmurs were found to be the same in either posture.

2. Patients who usually had the difference in both the pulse and murmurs well marked were occasionally found to have their murmurs unaffected by position. At these times the pulse was found to be equally unaffected by position.

3. On making those patients who had the difference in both murmurs and pulse well marked exert themselves so that their pulse was unaffected by position, it was then found that their murmurs were equally unaffected.

4. Again, patients, especially children, were occasionally nervous and frightened at the examination. In these, it was found, both the pulse and murmurs were unaffected by change of posture; but as their confidence became restored, the difference in the pulse manifested itself, and *pari passu*, the murmurs also became affected by altered position.

5. In changing from one posture to the other, the alteration in frequency of the pulse gradually, and not instantaneously, manifested itself. So likewise the alteration in the murmurs became gradually manifest.

Thus, 1st, the experiment with the aorta and tap, and, 2d, the very close relation between the frequency (*i. e.* force) of the heart's

* For the idea of this source of fallacy the author is indebted to Dr. Jenner.

impulse and the alteration in the character of the murmurs, rendered it very probable that the alteration was due to altered force in the blood-current, and not to any alteration in the condition of the valves. To set the question, however, quite at rest, the following method was adopted:—A tourniquet was applied to a man's axillary artery, and a murmur produced. This was found to be affected in all respects, by altered position, after the manner above stated.

The murmurs accompanying femoral aneurisms* were found to be similarly altered by a change of posture.

The alteration in the intensity of cardiac murmurs by a change of posture is often very great. As far as the author has been able to ascertain, it affects mitral murmurs more than aortic. He has met with cases, indeed, in which well-marked mitral murmurs entirely disappeared on the patient assuming the erect posture.

Mitral murmurs are not of the same intensity or pitch at the commencement and termination of the systole. Thus they increase in intensity and become heightened to their very termination. When very weak they are audible only at the very termination of the heart's systole; and when their intensity becomes, from any cause, as altered position or exertion, increased, they encroach on the systole from its termination towards its commencement till they are continuous with the whole of it, the termination remaining the loudest.

Can this increase in the intensity and elevation of pitch towards their termination be due to the rotation of the heart, by which its mitral orifice is brought more anteriorly? The rotation of the heart is probably so slight in amount, that it is difficult to conceive this possible. In confirmation, however, of this view, it may be stated that, when the murmur is listened to posteriorly—that is to say, at the angle of the scapula or close to the spine—the commencement of the murmur is most intense and highest pitched, the very reverse of what is heard in front, which would be expected, as the mitral orifice would be carried away from the posterior part of the spine.

Or may it be due to the heart being contracted, and consequently smaller, when the mitral orifice would be brought more anterior; or are both combined? If the alteration be due to the rotation of the heart, then tricuspid murmurs should be the reverse of mitral—namely, most intense at their commencement. But tricuspid murmurs are often so covered with pulmonary rhonchi, that it is extremely difficult to listen attentively to them.

Art. 50.—*An interesting case of Aneurism of the Aorta.*

By Dr. Eade, Physician to the Norfolk and Norwich Hospital.

(*Lancet*, Feb. 16, 1861.)

This case is interesting in four points of view:—(1) in there being more than one distinct aneurismal sac; (2) in about three weeks having elapsed between the first appearance of blood in the stool and the last final hæmorrhage; (3) in the stretched and flattened state of

* These femoral aneurisms were situated so low down, as probably not to be affected by any change in the pelvis brought about by the change of position.

the pneumogastric nerve, and the destructive inflammation of the corresponding lung; and (4) in the fact that he did not derive benefit from a sedative treatment, and that he felt better for generous diet and stimulants, with astringents.

Case.—The subject of this case was a stout, fat man, æt. 52, by trade a miller, who (with the exception of a slight attack of delirium tremens after a protracted debauch some seven or eight years ago) had always enjoyed excellent health until the commencement of his present illness. About five months previous to his admission into the Norfolk and Norwich Hospital he began to suffer from cough, mucous expectoration, hoarseness, and wheezing respiration. These symptoms (which he attributed to cold) continued gradually to increase; and in March, 1860, when he first came under my observation, he presented all the appearances of a man suffering from subacute bronchitis.

At this time his breathing was loud, wheezing, and almost asthmatic in character, with occasional paroxysms of more urgent dyspnœa. The expectoration consisted of a large quantity of serous fluid, mixed with a little bronchial mucus. On examining the chest, wheezing respiration with abundance of rhonchous and sibilant râles, were heard; all these signs being much louder and more marked on the right than on the left side. The heart's sounds were weak and clear, but free from bruit. No abnormal murmur could be heard anywhere in the chest, nor any secondary centre of pulsation be made out; but there was distinct dulness on percussion in the middle of the left side of the chest. There was no inequality of the radial pulses, no sign of ossification of the arteries, and no contraction of either pupil. He stated that he was not conscious of having injured himself in any way, and that he had never spat blood.

A week later (April 3d) his symptoms had become much aggravated. His breath was shorter, and the respiration more noisy—often almost stridulous, the cough and expectoration being equally troublesome. He now complained of pain in the left side of the chest and in the left scapular region, with occasional pains in the left shoulder and down the left arm. Distinct, but neither forcible nor extended pulsation could now be felt beneath the upper part of the sternum, but no bruit (either now or at any subsequent period) could be satisfactorily made out. Percussion-dulness was now well marked in the left supra-mammary region, and over the root of the left lung behind. The respiratory murmur on the right side was loud, noisily wheezing, and accompanied with loud, moist and dry râles; whilst on the left side behind it was very feeble, and in front nearly absent over almost the entire lung. The left jugular vein had become much more distended than the right.

At my visit on April 7th, I found him just recovering from a severe attack of spasmodic dyspnœa, with relaxed muscles, perspiring skin, livid countenance, and great respiratory labour and distress.

April 10th.—He had now somewhat improved as to his general condition, but the pulse and impulse of the heart were very soft and weak. The secondary pulsation had become more distinct and diffused, and could plainly be felt in the sternal notch, and beneath the inner end of the left clavicle.

16th.—He began to complain of difficulty in swallowing solid food.

24th.—He observed a little blood to have passed per anum.

29th.—He is reported to have coughed up a little blood on each of the two or three preceding days.

May 1st.—The difficulty of breathing and of swallowing had increased. The cough, expectoration, hoarseness, and occasional attacks of spasmodic

dyspnœa remained as before, and he complained much of pain in the left side. There was no increase of the area or force of the pulsating swelling.

Between this date and the 15th he continued gradually to fail in strength, his power of swallowing becoming at last limited to the taking of fluids. Twice or thrice during this fortnight he coughed up a considerable quantity of red frothy blood, and on the evening of this day he suddenly brought up a large quantity of nearly pure scarlet blood, and died in about a quarter of an hour afterwards.

The treatment adopted consisted at first of nitre, ipecacuanha, &c., given with a view to check the bronchitis, which was then the urgent symptom; but he was so much depressed by these remedies that stimulant expectorants —senega, squills, and ether, with opium—were obliged to be substituted, and from these he experienced decided relief. Subsequently, when the tumour was found to be increasing, ice to the chest, and acetate of lead internally, were had recourse to; but these, as well as every other depressant that was tried during the time he was in the hospital, were so markedly injurious, that they were compelled to be relinquished, and stimulants, with wine or brandy and good diet, to be given in their stead. Stimulants never appeared to excite the circulation or to increase the force of the pulsations, but, on the contrary, always seemed to make him quieter and more comfortable. He derived great relief from morphia and other preparations of opium, which were administered freely.

Body examined forty hours after death.—On raising the sternum, a tumour was seen beneath its upper part, which adhered to this bone and to the left upper ribs. The left external jugular vein was involved in it, and its cavity obliterated. The trachea was seen to be pushed over to the right of the median line. From one to two pints of clear yellowish serum were found in the left pleural sac. The right lung was enormously distended; its lobules very plainly marked out on its surface, and, when cut into, quickly collapsing. The left lung was collapsed, solid, and infiltrated throughout with dirty-white or grayish purulent matter, and with lymph not yet converted into pus. Blood was found in the mouth and pharynx, but not in the trachea. On opening this tube, the cartilages of the larynx were found to be rigid and ossified. The left bronchus was flattened and compressed, but not quite closed, and about half an inch above its orifice in the wall of the trachea was seen an irregularly rounded, ulcerated opening, the size of the end of the little finger, which opening was found to communicate with the cavity of an aneurismal sac, through a mass of coagulated fibrine contained in its interior. The œsophagus in its upper part was empty. Just below its middle it was encroached upon by a bulging swelling, of the size of a small orange, and just below this again was contracted to a very small size, but healthy. Coagulated blood was found in it both above and below the swelling. The heart was covered with much fat externally. Its walls were thin, and all its cavities enlarged. The muscular tissue of both right and left ventricles was found (under the microscope) to be in a state of advanced fatty degeneration; the valves were healthy. The aorta was greatly diseased; its lining membrane closely studded with atheromatous and bony scales and plates. These patches covered the greater part of its inner surface near the heart, and were very numerous and distinct even into its abdominal portion; but the large arteries of the neck, up to their junction with the aorta, were entirely free from disease. Two aneurismal sacs were found to spring from the aortal arch. One, the smaller, about the size of a duck's egg, sprang from its upper part, between (but not involving) the great arteries. It appeared to be composed of all the arterial tunics, was half filled with fibrinous coagulum, and communicated

with the artery by an aperture so large as virtually to make it a portion of this tube. The other, the larger, also a true aneurism, and also opening into the aorta by an orifice nearly as large as the entire diameter of the sac, arose from the back part of the arch immediately behind the left subclavian artery. It formed the large bulging seen in the œsophagus, and through the layers of fibrine contained in its interior blood had escaped by the ulcerated opening into the trachea. The left pneumogastric nerve was seen crossing over the front of the aorta to enter the left lung. It was much flattened (and must have been considerably stretched), and one large branch, just prior to its entrance into the lung, so much so as to exhibit quite an acute edge.

ART. 51.—*On the influence of Ozonized Cod-liver Oil upon the Pulse.* By Dr. E. SYMES THOMPSON.

(*Proceedings of Royal Med. and Chir. Soc.*, Feb. 26, 1861.)

Dr. Thompson begins his paper by referring to a paper by his father, Dr. Theophilus Thompson, in which the attention of the profession was first drawn to this subject. He then records the cases of about twenty patients at King's College Hospital, to whom the ozonized oil was administered. The usual dose was two drachms twice a day. Scarcely any effect was observed from doses of one drachm. The influence of the oil on the pulse increased in proportion to the dose in which it was given, the effect of half-ounce doses, two or three times a day, being more marked than that of smaller quantities. The following table exhibits, as simply and concisely as possible, the results:

Table showing the Changes of Pulse under Ozonized Cod-liver Oil.

Name.	Sex.	Disease.	Time of Taking Oil.	Pulse.	
				Before.	After.
			Days.		
J. P.	M.	Phthisis, first stage	7	116	98
J. S.	M.	Ditto	7	120	108
W. B.	M.	Tuberculous larynx	21	112	92
M. H.	F.	Phthisis, second stage	7	80	80
E. A. W.	F.	Ditto	14	140	112
C. H.	F.	Phthisis, first stage	14	100	104
R. N.	M.	Phthisis, third stage	7	150	116
E. D.	M.	Phthisis, second stage	7	138	112
J. O'D.	M.	Emphysema	4	104	86
M. M.	F.	Phthisis, second stage	5	140	108
E. R.	F.	Anæmia	4	120	116
M. S.	F.	Phthisis, third stage	2	94	92
E. H.	F.	Phthisis, second stage	10	104	88
W. S.	M.	Phthisis, first stage	7	104	104
P. R.	M.	Phthisis, third stage	4	104	96
S. E.	F.	Phthisis, second stage	20	120	92
G. M.	M.	Phthisis, third stage	4	140	120
H. C.	F.	Phthisis, first stage	2	108	95
W. H.	M.	Phthisis, first stage	5	120	96
J. R.	M.	Phthisis, first stage	9	120	98

The author also records the effects of ozone in another form. He has made use of the ozonized water (as prepared by Condy,) and found its influence in retarding the pulse considerable. In reference to a belief still prevalent amongst some members of the profession that ozone was a high oxide of hydrogen, he remarks that he has used the peroxide of hydrogen (prepared by Messrs. Bullock), and found that it exerted no special influence on the pulse, which was more often accelerated than retarded under its use, which seemed to corroborate the conclusions of Dr. Andrews, who showed (in the 'Philosophical Transactions of the Royal Society,' vol. cxlvi, p. 1 *et seq.*), that ozone was not an oxide of hydrogen, but simply an allotropic modification of oxygen. Of the twenty cases in which ozonized oil was given, in eleven the pulse was reduced more than 20 beats a minute; in four, upwards of 10 beats; in one, no effect was produced; and in one only was any permanent acceleration observed, and this could only be fully accounted for by disturbing circumstances. Of the seven cases in which ozonized water was given, in three the pulse was lowered more than 20 beats; in three, about 10 beats; and in one it was at one time retarded, and at another accelerated. Dr. Thompson drew special attention to the importance of the inquiry as connected with the treatment of phthisis, since, in this disease, anything that could retard the excessive rapidity of the vital changes would likewise check the development and progress of the disease. He showed that this had long been realised by the profession, and mentioned several remedies that had been used for this end, especially digitalis, which, though useful in some cases, was greatly inferior to ozone, being both less certain in its action, and often dangerous, from its cumulative tendency; while ozone exerted on the heart, not a depressing, but a strengthening and invigorating influence. It is suggested that the explanation of the remarkable effect of ozone in phthisis might be found in the greater affinity which phthisical blood had with oxygen,—an affinity which it also preserved when in the allotropic form of ozone. In conclusion, the author alludes to a paper recently published by a French physician,' On the Use of Ozonized Oil of Turpentine in Hæmoptysis,' in which the suggestions made by Dr. Theophilus Thompson, in 1859, have been followed, and he adds that he has himself prescribed turpentine with ozonized cod-liver oil in hæmoptysis with much benefit.

ART. 52.—*On the pathology of Milky Serum.* By the late Dr. C. T. COOTE, Assistant-Physician to the Middlesex Hospital.

(*Lancet*, Sept. 7 and 15, 1860.)

In these papers Dr. Coote relates a case of piarrhæmia accompanying acute diabetes mellitus, and collates it with several other cases of the same kind. His conclusions are—

1. Piarrhæmia consists in an excess of saponifiable fat in the blood, not in the mere liberation of fat from its combinations.

2. The excess of fat in the blood may be the result of two causes—viz.—

(*a*) The excessive ingestion of fat (as in piarrhæmia during digestion).

(*b*) The diminished elimination of the same (as in hibernation and pulmonary diseases).

It is not quite clear to which of these categories alcoholism belongs. It is *conceivable* that its elements may be *directly* converted into fat by deoxidation; but it seems more probable that the conversion is effected *indirectly*, the hydrocarbon of the alcohol attracting to itself that free oxygen which would otherwise have been employed in the combustion of the fats of the food, and so permitting the accumulation of the latter in the blood.

3. Fat, if directly ingested, may enter the blood with the chyle through the thoracic duct; but it is clear from the present case, that it may also be elaborated in; and absorbed directly from, the liver.

4. Piarrhæmia is not a *result* of diabetes mellitus, for either may exist without the other. Both seem to be consequences of the same derangement of the functions of the liver which overloads the blood, sometimes with an excess of sugar alone, sometimes with an excess of sugar and fat combined.

Why the liver should deal so differently in different cases with the hydrocarbons submitted to its influence it is hard to say. It seems not improbable that sugar alone is elaborated in the first instance, and that the excess of fat is the result of a deoxidation of this substance; for the conversion of sugar into fatty substances is not only capable of being effected experimentally (as in the production of butyric acid by fermentation of sugar under the influence of casein), but has been shown to take place in the animal economy in the formation of wax by bees fed only on sugar.

5. The pathology of blood milky from molecular albumen must be considered as still almost wholly negative. It is probably never an independent affection; but neither is it a mere accidental consequence of piarrhæmia. Its apparent relation to albuminuria seems to point to some organic change in the constitution of the plasma of the blood itself.

(D) CONCERNING THE ALIMENTARY CANAL.

ART. 53.—*Obstruction and Impaction of the Rectum as the first symptom of Famine.* By Dr. WARREN CROOKE, of Macroom.

(*Dublin Medical Press*, Nov. 28, 1860.)

The most remarkable disease which was engendered among the Irish poor by the great potato famine was the obstruction and impaction of the rectum by a solid mass composed of pulp of black potatoes and the bran of Indian meal. Dr. Crooke writes:—"My friend, Dr. Donovan, of Skibbereen, has the credit of being the first to direct our attention to it in a clear and sensible article which he published in this journal (I think) in 1847. The famine came earlier and was more intense in Skibbereen than in this union, and although I had then the charge of a large dispensary district, I did not meet

any cases for some months after reading his article; but they then came thick and heavy, and by their frequency and loathsome character added considerably to the hardships of these evil days. I have not met with it for ten years, and had quite forgotten it. We are all, I think, too much disposed to believe that we shall never see another famine, and probably another great famine will not occur in our days; but like causes produce like effects, and whenever black potatoes and Indian meal constitute the food of the poor, cases of this kind will occasionally occur. It is now known that the potato crop of this year is extensively diseased. In this union half the produce is already rotten, and it is much worse in other places. We have now no population to spare, if, indeed, we ever had any, and truly the Poor-law Commissioners have given proof of their ever-watchful anxiety in the cause of the poor by issuing their recent circular to boards of guardians, warning them to make timely preparations to meet the inevitable consequences. It is our duty to co-operate with them, and by all means in our power to assist in preserving the lives of the labouring classes. It may be said that a mechanical obstruction of this nature is easily discovered and the treatment simple. My experience proves quite the contrary, and as an illustration I will now describe the case which has given rise to this communication.

Case.—"Timothy Herlehy, æt. 60, was admitted into the Macroom Workhouse on the 4th inst., and I was summoned by the master to visit him on the grounds that he was suffering from retention of urine. I was informed that the dispensary physician had visited him on the day before, relieved his bladder, and administered a dose of purgative medicine, which did not act. He told me his bowels were costive, and that he had not passed water for twenty-four hours. Believing it to be an ordinary case of prostatic disease, I introduced a catheter with some difficulty, drew off a large quantity of high-coloured urine, and ordered him pills composed of calomel and croton-oil, to be followed by a castor-oil draught. I then had no idea of the true nature of his disease, and am aware that the dispensary physician was equally in ignorance of it. On visiting him next day, I learned that neither his bowels nor bladder had been relieved, and proceeding at once to examine the state of the prostate gland, I found, to my great astonishment, that the rectum was filled up to the mouth with a hard mass, and when the abominable smell belonging to such cases assailed my nostrils, the case was indeed clear enough. I immediately relieved his bladder, and with the handle of a spoon endeavoured with slow success to break up the mass. This is by no means an easy operation. I at one time possessed an instrument which I had made expressly for this purpose, but it has been long mislaid and forgotten. In this case the gut was blocked up to a great height, and having with much difficulty broken up the hardest part of the mass which lay against the sphincter ani, I passed up the blade of a straight midwifery forceps, with which I broke up the remainder and brought it down. The rectum was then syringed out with warm water. The bladder did not again require the use of the catheter.

"Involuntary evacuations from the bowels continued for two days. The man is now quite well, and appears to be of healthy sound constitution. I possess notes of many cases of this nature which I attended. It is almost entirely confined to men. I saw only one woman who was the subject of it, and never heard of another. It frequently proves fatal. I saw two die from sloughing of the rectum, and several from exhaustion. Of course famine diet was an

element in these latter. The sphincter ani is usually paralysed for a longer or shorter period. This depends upon the length of time that the obstruction has existed. I have met some cases where the sphincter and adjacent parts were in a high state of inflammation, and so exquisitely tender that the sufferer would not permit the touch of a finger, much less of an instrument. In such cases I have given a full dose of opium, and had the patient held down by assistants. I should now administer chloroform. I have found the nature of the obstructing substance in all cases the same—a hard adhesive mass, composed of the pulp of black potatoes and the bran of Indian meal. Having invariably seen these substances combined, I presume that such a mass cannot be formed without the union of the two. When broken up it presents the appearance of what the builders term 'haired mortar,' but deeper in colour. Retention of urine is not an invariable symptom, although sometimes, as in this case, it is the only one to which the attention of the physician is directed. Neither is complete obstruction of the bowels always present. In some of the worst cases a thin fluid of most offensive odour is occasionally discharged, or passes off involuntarily, and such are usually represented to be cases of dysentery."

Art. 54.—*Remarks on Expectation in Diphtheria.*

By M. Limousin, Physician to the Hospital of Bergerac (Dordogne).

(*Journ. of Pract. Med. and Surgery*, Nov., 1860.)

"A recent epidemic of pseudo-membranous angina," writes Dr. Limousin, "has afforded me an opportunity of making some remarks which suggest the question, Is diphtheria susceptible of spontaneous cure?

"For some time I had seen daily a considerable number of children and of adults who presented a uniform redness of the tonsils, and variously sized white or grayish patches. The mildness of the general symptoms rendering any active interference unnecessary, I merely prescribed in general a demulcent gargle, which was sufficient to effect a cure. Reports were, however, rife of persons having died in the neighbourhood from malignant sore-throat, and I found that active cauterization was frequently resorted to, with results not invariably satisfactory. I thence concluded that my cases must have been of a nature altogether different from the formidable disease which bears the name of diphtheria.

"What subsequently occurred, however, modified my opinion in this respect.

"On the 7th of February of the present year, I was summoned to a child, aged ten, who complained of difficulty and pain in swallowing. The skin was hot and moist, the pulse 130. I detected on the right tonsil a dingy yellow patch, about ten lines in diameter, the mucous membrane around being turgid and of a bright scarlet colour. On the 8th the patch had invaded the entire anterior aspect of the uvula, and disappeared on the 9th from the tonsil, but returned, somewhat diminished in size, on the following day. Up to the 14th, false membranes thus became detached, leaving the surface they had occupied of a bright red colour, were reproduced in much smaller proportions, and eventually disappeared altogether. I should add that simulta-

neously with the diphtheritic patches, hard and painful glandular enlargement was observed at the angle of the right maxilla. The nature of the disease was therefore perfectly evident; it was unquestionably an instance of pharyngeal diphtheria. Active interference was obviously imperative; but the child being fractious, and the mother weak and unintelligent, it was with difficulty I succeeded in exacting a promise that a gargle with decoction of blackberries and honey should be used. As a bribe to use the gargle, a copious allowance of pastry and some undiluted wine were given to the child, who recovered.

"This fact induced me, in subsequent cases, merely to watch the progress of the disease and prescribe tonics. I recollect, among others, a girl who was recovering from measles, when she became affected with pharyngeal angina, and the false membranes gradually invaded the inner face of the cheeks and lips. This patient was allowed food and wine-and-water during the entire duration of her illness, a detergent with honey was the only remedy prescribed, and a complete and rapid cure was likewise effected.

"It is obvious that brushing the pharynx of a person in health with a corrosive acid would be calculated to induce very serious illness. When pseudo-membranous deposits exist in the fauces, this imprudent practice may cause the disease to spread to parts which would otherwise have possibly escaped contagion. The history of diphtheria and of its treatment must be acknowledged to savour slightly of romance. It is generally admitted, for instance, that diphtheria very frequently begins in the pharynx, and thence extends to the mucous lining of the respiratory organs. Now, in the epidemic which I have observed, not one of the children I attended for croup presented any pseudo-membranous patches on the tonsils or the fauces, previously to, or during the progress, of the laryngeal disease. We are all too much inclined to adopt blindly the opinions of our masters. That disposition of the mind is rare indeed, which leads the practitioner to watch the progress of disease, free from foregone conclusions, and to permit nature to effect a cure by her own means, when the necessity for active interference is not evident!"

ART. 55.—*On the treatment of Acute Tropical Dysentery by large doses of Ipecacuanha.* By Mr. W. R. CORNISH, Staff-Assistant Surgeon, Madras Medical Service.

(*Madras Quarterly Journal of Medical Science*, Jan. 1861.)

In this very valuable paper Mr. Cornish has collected and tabulated all the well-authenticated cases of dysentery treated by large doses of ipecacuanha, to be met with in the official papers on the subject.

The table embraces the cases of 297 Europeans and 218 natives, treated by no fewer than thirty-four medical officers of her Majesty's British and Indian Medical Services. It may be stated, that no case is admitted into this table regarding which there was any doubt.

Table showing the results of Treatment of Acute Dysentery by large doses of Ipecacuanha.

Station.	Name of Medical Officer treating the Cases.	Europeans.			Natives.			Remarks.
		Treated.	Died.	Percentage of Mortality to Admissions.	Treated.	Died.	Percentage of Mortality to Admissions.	
Bangalore	Drs. J. Arthur, Pringle, Maitland, &c., 1st M. F.	30	0	0	0	0	0	
Ditto	M. Rogers, Esq.....	17	0	0	0	0	0	
Bellary	A. Chester, Esq.....	10	0	0	0	0	0	
Cannanore	Dr W. S. Murray	58	0	0	0	0	0	
Chicacole	C. A. Andrews, Esq. ...	0	0	0	8	*1	12·5	* This was a chronic case, and the patient greatly emaciated.
Cochin	F. Day, Esq.	5	0	0	19	0	0	Seven other cases are mentioned in Mr. Day's table, but as they did not return after the first dose was given, the results are not entered, and they have been omitted.
Coconada	E. E. Lloyd, Esq.	†4	0	0	0	0	0	† Another case was treated, but the patient would not persevere with the ipecacuanha. He subsequently recovered.
Cuddalore	C. J. Rogers, Esq.	1	0	0	5	0	0	
Cuttack	T. Croudace, Esq.	1	0	0	9	‡2	22·2	‡ Both of these were chronic cases, weakly, emaciated subjects, and unfavorable for the treatment.
Dowlaishweram...	T. Lowe, Esq.	2	0	0	12	0	0	

Guntoor	Dr. G. Bidie	0	0	0	19	1	5·2	
Jackatalla	Dr. G. W. Sparrow	20	0	0	0	0	0	Mercurials also used.
Kamptee	M. W. Murphy, Esq.	23	2	8·6	0	0	0	The fatal cases complicated with hepatic abscess.
Ditto	W. W. Rawes, Esq.	0	0	0	2	0	0	
Ditto	Dr. J. Kennedy	9	*1	11·1	0	0	0	* Symptoms of the ulceration of the bowels existed before the treatment commenced.
Labuan	J. Fraser, Esq., M.B.	0	0	0	3	0	0	
Madras, 1858-59	J. Mee, Esq.	36	0	0	0	0	0	
Ditto 1859-60	Ditto	23	0	0	0	0	0	
Ditto	A. Blacklock, Esq.	10	0	0	0	0	0	
Ditto	Dr. Mudge	0	0	0	63	0	0	
Moulmain	J. McDonald, Esq.	1	0	0	0	0	0	
Ootacamund	G. Mackay, Esq., M.D.	0	0	0	3	0	0	
Palaveram	W. R. Cockerill, Esq.	5	0	0	10	0	0	
Penang	W. H. S. Burn, Esq.	0	0	0	8	0	0	Other remedies were used during convalescence.
Rangoon	Dr. D. Campbell	0	0	0	4	0	0	
Samulcottah	James Donaldson, Esq.	0	0	0	4	0	0	
Shouygheen	J. J. Heffernan Esq.	1	0	0	†8	1	12.5	† Natives of India.
Ditto	Ditto	0	0	0	‡9	3	33·3	‡ Burmese in Jail.
St. Tho.'s Mount	Dr. C. Currie	13	0	0	0	0	0	
Ditto	M. Rogers, Esq.	15	0	0	0	0	0	
Thyetmyo	J. L. Ranking, Esq,	3	§1	33·3	0	0	0	§ Ill 12 days before treatment began. Habits intemperate. Symptoms of delirium tremens before death.
Ditto	J. Henderson, Esq	0	0	0	4	0	0	
Tonghoo	Dr. J. Pringle	0	0	0	26	0	0	
Ditto	Dr. W. Farquhar	8	0	0	0	0	0	
Trichinopoly	R. P. Linton, Esq.	0	0	0	2	0	0	
Vizagapatam	Dr. C. J. Smith	2	0	0	0	0	0	
	Total	297	4	1·3	218	8	3·6	

From the accompanying extracts from the reports of the various medical officers, it will be evident that the cases were not *specially selected* for the experiment, but, in fact, were the ordinary dysentery admissions to be met with at the several stations. The success of the treatment appears to have been most marked, as might have been, *a priori*, expected, in Europeans suffering from acute uncomplicated dysentery. Of the whole number treated (297) four cases proved fatal, giving a death-rate of only 1·3 per cent. instead of 7·1 per cent., the average for a period of seventeen years. Of the four fatal cases, one was a man of intemperate habits, and symptoms of delirium tremens supervened upon the attack of dysentery. Two were complicated with hepatic abscess, the latter being the immediate cause of death; and in the remaining case, symptoms of ulceration of the intestine were present, before the adoption of this mode of treatment. It is remarkable that so large a number of cases of acute, uncomplicated dysentery should have been treated *without a single casualty*, even supposing the type of the disease to have been the same at all stations, and that it was of unusual mildness. In the case of her Majesty's 44th Regiment, the good effects of this mode of treatment are well shown. The regiment was new to India, having arrived only at the end of the year 1857; it occupied the barracks of Fort St. George. During the year 1858-59 there were 104 admissions from dysentery, and the first 68 of these were treated in the ordinary way with a mortality of 6· or 8·8 per cent. The remaining 36 cases, with 23 occurring in the year 1859-60, making a total of 59, were treated with large doses of ipecacuanha, and *all recovered*. Mr. Mee thinks that the type of the disease had become milder before beginning the ipecacuanha treatment, but admitting this to be the case, the contrast in the results of treatment is very striking. Although the large majority of medical officers pronounce strongly in favour of this treatment only in the acute, uncomplicated dysentery of Europeans, yet there can be no doubt, from the experience of others, that it has had a remarkable effect, in some cases, where the disease had passed beyond the first stage, and where deposition in the submucous tissue or ulceration already existed. In such cases, however, the remedy requires judicious management, and its operations to be carefully watched. Further experience is required before we can determine how far it should be depended upon in cases which have advanced to the second stage before coming under treatment. It is hoped that some of the numerous medical officers interested in the subject, who have time and opportunities at their disposal, will place upon record their views with regard to this latter point.

The treatment of dysentery, as it occurs in the natives of India, by ipecacuanha administered in large doses has been less successful than in Europeans.

The comparison is perhaps scarcely a fair one to make, as the table contains the cases of convicts in jail, as well as of sepoys, several of the former having proved fatal. It is well known that the inmates of Indian jails suffer from a form of dysenteric diarrhœa which is usually very fatal. The disease, as it has come under the author's observation, appears to be connected with a depraved condition of blood, induced

by a long course of semi-starvation; and in some cases the effects of change of food, from ordinary to jail diet, overcrowding, and deficient ventilation, have all acted in producing the disease. The symptoms are almost invariably of an asthenic character; there is diarrhœa at first, the stools feculent and passed without pain. As the disease progresses, the stools become more frequent, bloody, and full of mucus, and often contain a bright green colouring-matter in considerable quantity. This colouring-matter is probably due to altered blood, but it is a fatal symptom. Mr. Cornish does not remember any case having recovered in which this appearance was seen in the stools.

Treatment in such cases is merely palliative, and they are obviously unsuited for the experimental trial of ipecacuanha in large doses.

Independent of this, Mr. Cornish believes that further experience will show that the judicious use of ipecacuanha in acute dysentery, as it affects the natives of India, will be found the most successful plan of treatment with which we are at present acquainted.

The table shows that, out of 218 natives treated, there were eight deaths, the ratio of mortality being 3·6 per cent., or below the average in the Madras army for seventeen years.

ART. 56.—*Two cases of temporary recovery after Perforation and Peritonitis from Gastric Ulcer.* By Dr. D. W. FRAZER, Lecturer on Materia Medica at the Carmichael School of Medicine.

(*Dublin Hospital Gazette*, April 15, 1861.)

The recovery in both these cases was so complete, that the patients survived for many months to all appearance in good health and in the active enjoyment of life. In the first case, a second ulcer had formed, and, by its destructive perforating action, caused the inflammatory symptoms which ended life. In the second case, although a second ulceration had also formed, and was found in the stomach when the patient died, it was from the rupture of the old and cicatrized ulceration, which gave way accidentally, whilst straining, that the second attack of peritonitis was excited, which terminated fatally.

CASE 1.—Late on Saturday evening, December 12th, 1857, a young lady was suddenly seized with acute pain in both shoulders, and immediately after with pain in the region of the stomach, which was so intense that she fell down upon the ground from the chair on which she had been sitting, and fainted soon after, although she was previously, to all appearance, in good health, and talking cheerfully up to the very moment of the attack.

I saw her within less than an hour; the surface of her body and her limbs were cold; her tongue felt quite cold, like the back of a frog, or like the tongue in cholera. She had not vomited; the entire of the abdomen was tender, especially the epigastrium, and she could not bear the slightest pressure; the heavier the hand pressed the more distressed she expressed herself as feeling; she lay in bed, to which she had been carried whilst fainting, with her knees drawn up, screaming with pain, and the epigastrium was tense

and tympanitic, but no air could be heard moving in the viscera, nor was there any sign of colic or of lead-poisoning, and her bowels had acted freely on the morning of the attack; the pulse was about 90° and very feeble; she was of hysterical habit, and the sobbing and screaming had much of the hysterical character, but she expressed herself as unable to breathe freely from the acute pain about the stomach.

I gave her at once fifty drops of laudanum and one drachm of aromatic spirits of ammonia, and had turpentine stupes, sinapisms, and afterwards cloths dipped in strong whisky applied to the epigastrium; these applications relieved her after a time, and she slept, but started up at intervals screaming with pain, and at 4 a.m. took another draught with thirty drops of laudanum.

On the following morning I found her drowsy from the effects of the anodyne, and the pain, although relieved, still continued to be felt acutely; she could not tolerate the slightest pressure over the epigastrium; the tongue was dry and furred, skin hot, pulse 120, and full. A flannel cloth damped with camphorated spirits and laudanum was applied to the abdomen, and she got a grain of opium, and a grain and a half of hydrarg. cum cretâ every four hours. Fluids were prohibited as far as possible, and she was strictly confined to a horizontal posture.

She slept during the day, the pain returning in paroxysms at longer intervals, but still acutely, and towards evening she perspired freely. I should state that she was menstruating when the attack came on; the discharge continued unchecked until this evening, when it ceased, having lasted its usual time.

14th.—Pulse 100; better in every respect; bowels twice moved in the course of this evening, and again during the night.

15th.—Much improved, but the epigastrium was still tender to pressure. I observed this morning that she was remarkably sallow-looking (like the colour of patients after our ordinary relapsing fevers), and she looked considerably pulled down as if from the effects of a protracted and severe illness. From this time she continued gradually to improve, but suffered for a few days from debility and severe rheumatic pains in her arms, shoulders, and knees.

This young lady was chlorotic, requiring to use ferruginous preparations at intervals, but she was well developed, rather inclined to flesh, and in a few days, when taking her usual chalybeate, she would invariably acquire a brilliant rosy complexion. From the first I considered that her symptoms indicated the perforation of a gastric ulcer, and even noted her case as such, but her satisfactory recovery caused me for a time to doubt the correctness of my views, which, however, were too fully confirmed by succeeding events.

I was again suddenly summoned to see her, *about twenty months after her recovery from her first attack*, at 2 o'clock in the morning. On the previous day she had dined heartily, and afterwards taken a walk of some miles. She complained of pain in her stomach whilst out walking, and went into a relation's house; but feeling much better, she walked home again. At 10 o'clock at night she was sitting down when she was suddenly attacked with pain in the abdomen, and screamed aloud from its violence. She was with difficulty got upstairs to bed, and her friends thinking that she had an attack of colic administered brandy freely, and also sent for an anodyne draught, which she took. When I saw her she was still screaming out at short intervals, and complaining of intense pain, which she referred altogether to the region of the bladder, and she was much distressed by a recurring desire to pass water, although, as she said, she did not require to do so. The abdomen

was tender, especially the hypogastrium, but there was little or no pain experienced on pressing the epigastric region, and she complained of severe pain in her right shoulder, the right side of her neck, and down the right side of the chest; the heart was beating tumultuously, and its sounds were audible over the entire chest. Pulse rapid, irritable, and rather irregular, but not at all wiry. Tongue *warm* and slightly furred, face eminently hysterical, and voice good and strong. She had been given more stimulants than I wished; I therefore forbade their further use, and also of fluids generally, as I feared still that the origin of the mischief lay in the stomach. I gave her a full opiate at once, and by sitting at her bedside for some time, succeeded in quieting her and allaying much of her hysterical sobbing. Next morning I found that she had slept soon after I left, and remained asleep for five or six hours, but awoke still complaining of the pain; the face was decidedly hysterical, not at all peritonitic. Pulse rapid, 100, but soft; the pain was still complained of all down the right side of chest, and was aggravated by taking a deep inspiration, but there was no catch in the breathing, no friction sound in heart or lung; she passed water twice, densely loaded with pale lithates; the abdomen was quite tympanitic and felt tender to pressure, especially over the epigastrium.

I had evidently a peritoneal attack to treat, and from the favorable termination of her previous illness, which had clearly been of similar character, and much more intense in its symptoms, I was led to hope for an equally favorable result, especially as the collapse was far less severe, the entire attack to all appearance milder, and the symptoms in general more promising. I directed turpentine stupes to be applied repeatedly during the day; no stimulant to be given on any account, and fluids as sparingly as possible, and Hyd. cum Cretâ combined with opium every four hours. Towards evening she became worse, but not so as to attract the special attention of her friends who were living with her some distance from town. She left her bed twice in the night and returned to it unaided, but still complained of the pain at intervals, and even cried out from its severity; about two o'clock in the morning she asked for the bed-vessel, and whilst sitting up suddenly expired.

Being deeply interested in this case, I obtained a necroscopic examination. Her face had assumed in a few hours an aged and anxious appearance, and the abdomen was tensely tympanitic. The intestines were vascular, with quantities of yellow lymph in flocculi scattered in flakes over them, and gluing their coils together; the upper portion of the ileum greatly distended, and about a foot in length of the lower part of the same intestine, small and contracted. The stomach was displaced and dragged down towards the right side, and the liver was enlarged, pale, and firm, in the commencing stage of the so-called albuminoid or waxy degeneration.

I found about three pints of brownish-coloured fluid in the lower part of the abdominal cavity and pelvis; much of it had evidently escaped from the stomach, and a green pea, part of her dinner upon the day of her fatal attack, lay on the surface of the small intestine in its lower portion; I found two other peas lying in the aperture of the perforating ulcer, which was at the upper part of the stomach, and situated in the midst of a quantity of firm, old adhesions, fully an inch long, and which attached the surface of the stomach around the ulcer by firm connexions to the under surface of the liver; these adhesions were of old formation, and had numerous vessels ramifying in them passing from the liver towards the ulcer; a patch of firm and tough lymph resembling Ballies' "white spot upon the heart" covered the surface of the stomach and bound it very perfectly to the liver, but around the opening itself, which was sufficient to admit the top of the thumb, was a quantity of

soft and recent lymph. The stomach was here constricted, so as to be completely bis-sac, the upper half occupying its usual situation in the epigastrium and left hypochondrium, the lower portion having been that part which extended so much downwards, and to the right, and which in itself was fully the size of an ordinary stomach.

I removed the stomach, pancreas, &c., for more minute examination, and on laying the stomach open, the perforation was seen upon the contracted part, which resembled a second pylorus, and about half an inch beneath the lower edge of the perforation were the remains of the previous ulcer, which had cicatrized, and by its contraction produced the puckering of the viscus and its double appearance; this old ulcer had, I believe, originally perforated, and then the lymph poured out had formed the firm and old adhesions between the exterior of the stomach, the liver, and pancreas, which were evidently of much older date than the recent lymph of the fatal attack. The pancreas, also, was opposite the opening of the second or fatal ulcer, and to some extent had rendered its aperture valvular.

The peritoneal covering of the bladder and of the pelvic viscera was coated with lymph. The uterus and ovaries were healthy.

Case 2.—Singular as the assertion appears, I believe it is often the case, that anomalous and strange diseases and accidents occur in pairs, and so it was with this attack of perforating ulcer.

Just four days previous to my seeing the lady whose melancholy end I have described, I was called in haste to visit another young lady, who had been suddenly attacked with intense pain in the stomach. There was extreme tenderness of the epigastrium, her face was pale, and expressive of much distress and suffering; but she had no vomiting, and there was not altogether the same amount of collapse, and consequent fever, that attended the previous case I have described. This lady was naturally inclined to flesh, and had a bright rosy complexion, but it alternated with extreme pallor, and all the ordinary symptoms of chlorosis.

Under treatment with full anodynes, counter-irritants, rest, and the careful avoidance of fluids, as far as possible, she completely recovered from the attack, and I find from my notes, that four days after she was menstruating, and from that period she rapidly improved; the pain decreasing and soon disappearing, and she gradually resumed her usual occupations. She, however, suffered at intervals from transient attacks of gastric pain, and also from fresh relapses of her chlorotic state, which she appeared to prefer to a natural rosy tint, as I have reason to believe that she even drank vinegar to some extent to escape the evil of a robust state of health.

About six months previous to her second fatal attack, I saw her, and found her suffering once more from her usual symptoms of gastric pain, the result of improper food. I now spoke seriously to her as to the necessity of attending to the dietetic rules laid down for her guidance, and of taking those remedies which I ordered, stating my opinion of the nature of her recurring attacks, which I considered she was too careless about; and with the usual effects of over much candour, I lost my patient for some time, who, I was informed, got completely cured by uterine cauterization, and the removal of an ulcer, which was asserted to exist by the gentleman whose patient she became.

Still I did not change my opinion, and it was too soon fatally verified. She was married, and in a few days afterwards got a severe cold, as was supposed: she was attacked with purging and tenesmus early in the morning, and suddenly called to her husband, saying she was very ill and had intense pain in the pit of the stomach, seized his arm, and was, with difficulty, able to get

into her bed again; she rapidly passed into a state of collapse, her surface became cold, and she did not rally from this condition until about noon (six hours after the commencement of the attack). Her husband called in Mr. Harrison, of Dorset Street, who gave her at once forty drops of laudanum and afterwards twenty drops more, and he also administered three enemata, all of which were retained, or nearly all, but the pain continued unabated. At 10 p.m. I saw her; her face was anæmic and very anxious-looking, the tongue was cool and rather dry; pulse 130 and feeble, occasionally intermitting; she complained of acute pain in the epigastrium and right hypochondrium, and of distressing thirst, and for some hours had been drinking water freely; there was no strangury; the abdomen was tense, globular, very tympanitic, and tender everywhere to pressure, particularly in the epigastric region. I gave her forty drops of laudanum at once, and ordered twenty drops more to be given every two hours, restricting her to three teaspoonfuls of cold water for drink, as it was impossible to prevent her using some fluid.

Next morning (April 30th) I found that the first draught had given her relief, and she had rested comparatively easy ever since, and slept at intervals; her face was less anxious, the bowels had moved three times, the discharge being watery, but feculent, and the abdomen was still tense and tympanitic; pulse 130 and full; she was perspiring freely, her chief complaint was of thirst. I therefore ordered small fragments of ice and a little cold chicken jelly at intervals, and continued the opiate every three hours. I saw her at mid-day and again in the evening, when she expressed herself as feeling greatly relieved, the bowels having been again twice moved.

May 1st.—Slept well the entire night, waking at intervals from the thirst alone; the abdomen was much less tympanitic, and felt soft and flaccid in comparison with what it had been previously; the face was cheerful and the pulse good, but still 130. Evening.—Still improving, pulse 124, steady and full, the tenderness greatly decreased; she complains only of the thirst.

May 2d.—I had ventured to entertain some slight hopes last evening of a successful issue, but had not left her bedside for more than fifteen minutes, when she tried to turn in bed, and then felt a sudden sharp pain which she compared to a blow on her side; it commenced in the epigastrium and extended over the liver; she passed a most restless night, was drowsy and delirious at intervals, and when seen this morning she was evidently much worse; the pulse 140, weak, thready, and intermitting; respirations 24 in the minute, peculiarly sobbing and slow, and she said that a full breath gave her a sharp pain in the side; there was a loud and disagreeable *frottement* audible over the entire region of the liver, and she referred her sufferings at present chiefly to this part. A blister was applied, the opiate continued every four hours, and I found it necessary to give wine at once, and to repeat it every hour through the day, along with strong beef tea in small quantities.

In the evening she was rather better, pulse 136 and full; she was quite under the influence of the opium, drowsy and dozing off every minute, the pupils of moderate size. I noticed that the abdomen had become once more tense and globular since the renewing of the inflammation.

Next day (May 3d) still continuing in the same state or rather worse; the thirst extreme, the tongue drying, and having been purged frequently during the night, I had the aid of Dr. Kirkpatrick's experience, but she continued to sink, and died about 10 that evening. I saw her an hour before her death; she was perfectly sensible, her voice was strong, but the hands felt cold and clammy, the pulse was rapid and feeble, the heart acting strongly; there was

marked cadaveric odour, which, indeed, had been present for the past two days. She died quietly, but was sensible to the last moment.

I was so convinced of the nature of the attacks of gastric pain which this young lady suffered from, and that a perforation of a gastric ulcer had previously existed, and was the cause of her former serious peritoneal inflammation, as well as of her last fatal seizure, that I was most desirous of verifying my opinion by an inspection of the stomach, and the more so as there had been some doubts entertained by others as to the real character of her illness, and even of the existence of gastric ulceration at all. I made the examination with the aid of Mr. Harrison.

On opening the abdomen, some flatus escaped from the peritoneal cavity with a loud hissing noise. I found the small intestines distended, vascular, and covered with flakes of recently effused lymph in various parts; about a pint of reddish fluid lay in the pelvic cavity. Rough and thick deposits of lymph lying over the convex surface of the liver, and on the corresponding portion of the diaphragm, accounted for the coarse and disagreeable *frottement* heard during life.

On pulling down the stomach, which adhered firmly to the left lobe of the liver, we at once observed the perforating ulcer seated on the upper and anterior surface of the stomach; it could admit, with ease, a finger point, and was about three fourths of an inch distant from the lesser curvature. An abundance of solid, firm, *old* lymph, of pale-yellow colour, lay around this part, and on the under surface of the liver corresponding to it, and adhesions had evidently existed between the two surfaces forming an attempt at cure, but these subsequently giving way (as I believe, during the act of straining) a second attempt at adhesion by the effusion of quantities of more recent lymph appeared to have been made at a distance all around the ulcer. I could find no trace of food in the fluids extravasated or contained within the peritoneal cavity.

When I opened the stomach I found that there were two ulcers in it; the one which had perforated was evidently old, and of long standing, and from the considerable puckering of the tissues around it, and the smooth and healthy state of its edges and of the surrounding mucous membrane, I am inclined to consider that it was the cicatrized remains of the primary ulcer which she suffered from, and which, although healed, had again become accidentally torn, and thus proved fatal, when, to all appearance, completely cured.

A second ulcer, the size of a silver penny, of the same dangerous perforating character, existed at the upper and posterior part of the stomach, and adhered by soft, easily separated adhesions to the pancreas; it had not yet completely perforated, but was bounded only by the translucent layer of the peritoneum; no trace of lymph was effused in its neighbourhood; to this ulcer I would ascribe the more recent gastric symptoms from which she suffered.

The uterus was quite healthy; its cervix showed deep traces of cicatrices with loss of tissue; the ovaries were diseased, covered with old lymph of very white hue, and some of the Graafian vesicles were converted into minute hydatid sacs.

ART. 57.—*Case of Perforation of the Intestines, in which worms were found in the peritoneal cavity.* By Dr. SANDWITH, Surgeon to the Hull General Infirmary.

(*British Med. Journ.*, March 9, 1861.)

CASE.—Antonio Krabolo, æt. 23, an Austrian sailor, was admitted under Dr. Sandwith, on December 12th, 1860. His countenance was pale and haggard, and indicative of distress. He complained only of pain in the abdomen. No particulars of his history could be obtained, merely that he had been ill about six days only. He was at once put to bed; and on being seen a short time afterwards, was found in a very depressed state. The warmth of the body was greatly reduced; pulse very small and feeble. Abdomen decidedly tumid, but not particularly painful on pressure, except over the region of the bladder, where there was some dulness on percussion. The catheter was introduced, but only a few ounces of urine were withdrawn. A turpentine fomentation was ordered to be applied to the abdomen.

℞ Ammon. Sesquicarb., ʒij;
Spiritûs Æther. Nitr., ʒiij;
Mistura Camph., ad ℥viij. M.
Fiat mistura, cujus sumat partem 8vam 3tis horis.

℞ Calomel, gr. j;
Opii, gr. ½. M.
Fiat pilula cum singulis dosibus misturæ sumenda.

He was ordered to have three ounces of brandy. There being no evidence of his having had any action of the bowels for several days, a common enema was ordered in the evening.

December 13th.—He still remained in a state of collapse. The skin was cold and clammy; the pulse at times scarcely perceptible; state of the abdomen was much the same; there had been no action of the bowels. The enema and purgative were repeated, and a grain of calomel (without opium) was prescribed to be taken every three hours. He was ordered to have wine and brandy *ad libitum*. In the middle of the day he vomited a large worm (*Ascaris lumbricoides*).

Vespere.—The vomiting continued, but he had thrown up no more worms. Ten grains of calomel in powder were ordered to be taken immediately. He died the same evening at 10 p.m.

Autopsy, fourteen hours after death.—On opening the abdomen a quantity of dirty brown fluid, not having a marked fæcal odour, escaped. There was evidence of intense and general peritonitis. The intestines, especially the small ones, were coated with a thick layer of lymph; and, on peeling it off, their peritoneal coat was found intensely congested. The omentum adhered by effused lymph to the exposed surface of the intestines, and the liver was coated with a layer of the same. On separating the coils of intestine from each other, three worms, similar to the one vomited before death, were found loose in the upper part of the peritoneal cavity. Three more were afterwards found, deep in the cavity of the pelvis. The alimentary canal was removed entire, from the termination of the œsophagus to near the anus. In the stomach were found three more worms; its mucous membrane was healthy (rather pale), and no perforation visible. A stream of water was passed through the rest of the canal for the purpose of ascertaining the existence of an opening, through which the worms must have escaped into the cavity of

the abdomen. About the middle of the duodenum such an opening was found (through which the water issued in a tiny stream), about the size of the middle of the body of a full-sized lumbricus, perfectly round, with smooth edges, the lymph on the peritoneal surface extending quite up to its margin. The mucous membrane of the canal throughout was paler than natural, otherwise perfectly healthy; there was some little vascularity in the neighbourhood of the perforation, but to no marked degree. At this part, but below the opening, were found three more worms (making in all thirteen). The bladder was empty and contracted; the other organs were healthy. The large intestines contained hardish lumps of pale, yellowish-coloured fæcal matter.

There being no evidence of disease in the intestinal canal beyond what has been mentioned, the probability is that the worms caused irritation and local inflammation in the canal, ending in ulceration; some of the worms, as well as the contents of the intestine, escaping through the opening into the peritoneal cavity, and setting up general peritonitis.

ART. 58.—*On the treatment of Tapeworm by Aromatic Sulphuric Acid.* By Dr. B. DARRACH, of Quincy, Illinois.

(*American Quarterly Journal of Med.*, Oct., 1860.)

Dr. Darrach is indebted, he tells us, for his facts, to Dr. Adam Nichols, and he publishes them with the concurrence of this gentleman.

"On the 5th of February last, the doctor was called to see Mr. P—, farmer, aged about thirty-five, native of this vicinity, and living a few miles from town. He had been suffering for three months with vague pains in different parts of the body; was debilitated and emaciated; had some cough; a slight expectoration, and obstinate constipation. When I saw him for the doctor on the 10th, he had the appearance of a phthisical patient. On Dr. Nichols' second visit the patient exhibited a discharge from his bowels, which had alarmed him; to use his own expression, 'his bowels were all coming away from him.' Upon inspection, the discharge was found to be a mass of tapeworm several feet in length. He was ordered aromatic sulphuric acid ʒj, water Oiss; to drink of it as often as he could until he had used it all. On the third day he passed about a pint of the worm in fragments, and apparently partly digested. The dose was repeated on the fourth day as a precaution, but without expelling any more of the animal.

"February 24th.—Reported himself: bowels regular, cough gone, appetite good, gaining flesh, and no symptoms of the worm.

"Since the above date he has entirely regained his flesh and strength, and has perceived no indication of a return of the parasite.

"The above remedy was brought to the doctor's notice in rather a singular manner, about thirty years ago, while practising on Cape Ann, Mass. An old woman sent for him one afternoon to visit her, and greeted him on his arrival with the announcement, 'Doctor, I've got a tapeworm!' The doctor not finding any very satisfactory evidence of the presence of such a creature, tried to laugh her out of the idea, and left her. A few days after he was summoned again, when she told him—'Doctor, I've killed my tapeworm, and there he is!' showing a

vessel half filled with the animal. On inquiry as to what killed it, she replied—'Well, I felt him a poking his nose up into my stomach again this morning, so I took a teaspoonful of elixir of vitriol. I thought that was the sourest thing I could find, and gave it to him for his breakfast.' Subsequently the doctor met with two other cases on Cape Ann, and profiting by his experience in the case of the old woman, treated them successfully with the acid, giving one drachm in several ounces of water in the course of three or four hours.

"A few years ago, in this city, Mrs. M—, a feeble woman, having kept her bed for five months, and at the time very low from a recent confinement, was surprised one morning by the passage of about five feet of tapeworm. Turpentine was administered for about two days, without success. The acid, which had for the time been forgotten, was then given—three teaspoonfuls in twenty-four hours, in sweetened water, when a long worm was expelled. The patient speedily regained her flesh and strength.

"All of these cases, excepting the first, remained under observation for some years, without any return of the worm. In all, the discharged worm was in the same fragmentary and semi-digested state. Finally, the doctor says, the remedy has never failed with him."

(E) CONCERNING THE GENITO-URINARY SYSTEM.

ART. 59.—*On Diabetes.* By Dr. GRIESINGER.

(*Archiv für Physiol. Heilkunde*; and *Amer. Quar. Jour. of Med. Sciences*, Jan., 1860.)

In order to draw out as complete a history as possible of the disease, Dr. Griesinger has collected, from various sources, 217 sufficiently detailed cases; his conclusions are accordingly based upon 225 observations.

Directing attention, in the first place, to the causes of diabetes, Dr. Griesinger narrates two cases where there might be a suspicion that the disease had been produced by the excessive use of sugar, or of saccharine aliment. A diet too exclusively vegetable, and especially if containing much starchy matter, exercises a marked influence on the production of diabetes. In one case the disease seems to have been produced by a fall; in reference to this mode of causation, Dr. Griesinger found, on analysis of his 225 cases, that in 20 the disease appeared to have a traumatic origin. In these cases the disease should rather be ascribed to the general shock to the system than to any special cerebral lesion.

The disease was found to be distributed between the sexes in the following proportions: out of 225 cases, 172 men (76·4 per cent.) and 53 women (23·5 per cent.) were affected. With regard to age, Dr. Griesinger confirms the general opinion with regard to the rarity of the disease in childhood and in old age; the period when diabetes is most common in either sex is from 20 to 40.

In the majority of cases, tuberculosis supervenes after the disease has existed a certain time. Dr. Griesinger has also observed among diabetic patients a great tendency to inflammations, accompanied

with suppuration or gangrene. A constant diminution in the animal temperature was noticed several times. Dr. Griesinger attributes this diminution to an insufficiency of nutrition. In one case the presence of sugar in the urine and in the sweat was found to alternate.

Since the interesting researches of Claude Bernard on the function of the liver, the opinion has been advanced that diabetes might depend upon hypertrophy of this organ. But this opinion is contradicted by an appeal to facts; for in only one case was the liver found to be a little increased in size, and here there had been no hepatic symptoms during life, and after death no large quantity of sugar was found in the organ. It may be stated generally, that the progress of the disease appears to afford little support to the theory which ascribes the production of diabetes principally to the liver. Dr. Griesinger seems disposed to admit that the disease is due to a derangement of the digestive functions, which itself is subordinate to a lesion of innervation. The kidneys were not found to present any marked alteration from the healthy condition. In fact, the result of the post-mortem examinations would lead to the belief that diabetes is rather a functional derangement than an affection produced by a special organic disease.

In reference to treatment, Dr. Griesinger shows the good effects of alkalies, particularly of bicarbonate of soda, administered sometimes to the extent of half an ounce a day. The author has endeavoured to discover what influence other substances exert upon the progress of the disease. Acids augment the quantity of sugar, so do alcoholic liquids. Yeast has been administered, but with no good effect. Attempts have also been made to facilitate the oxidation of the sugar by the inhalation of oxygen, of chlorine, and of ozone, but without success.

The author investigated the point, as to whether diabetic patients may be allowed to drink as much as their thirst prompts them, or whether it is better to cut off a portion. He found that water, taken in large quantity, certainly augments the quantity of urine and of sugar; that a slight diminution produces no effect; that privation from liquids produces a prompt diminution in the amount of sugar; but that the effect of privation is quite temporary, for as soon as the patient has fully quenched his thirst, he passes in the urine large quantities of sugar.

Consequently, Dr. Griesinger concludes that alkaline remedies and an animal diet are the only means at the disposal of the physician in the treatment of this intractable disorder.

ART. 60.—*On the estimation of Sugar in Diabetic Urine by the loss of density after fermentation.* By Dr. WM. ROBERTS.

(*British Med. Journal*, Nov. 24, 1860.)

When diabetic urine is fermented with yeast, its specific gravity, previously ranging from 1030 to 1050, falls to 1009 or 1002, or even below 1000. This result is mostly due to the destruction of the

sugar it contained, but partly, also, to the generation of alcohol, and its presence in the fermented product. As the diminution of density must be proportional to the quantity of sugar broken up by the ferment, the amount of loss evidently supplies a means of calculating how much sugar any urine contains, always provided that the remaining ingredients of the urine continue unchanged, or become changed in some uniform ratio.

To ascertain the relation between the density lost on fermentation, and the sugar destroyed, experiments were made on the urine of diabetic patients on the following plan:—1. The amount of sugar per 100 parts was ascertained by the volumetrical method, with Fehling's test solution. 2. The density of the urine was taken. 3. Three or four ounces were then placed in a twelve-ounce phial, with a drachm or two of German yeast, and having lightly covered the bottle it was set aside to ferment. 4. In about twenty-four hours the fermentation was finished and the froth dissipated, The density was then taken a second time, and the loss calculated.

By operating in this way on a specimen of diabetic urine, sp. gr. 1038·60, the following results were obtained:—sugar, per 100 parts, by the volumetrical method, 7·69; density before fermentation at 60° or $D = 1038{\cdot}60$; density after fermentation at 60° or $D' = 1005{\cdot}92$; density lost, or $D - D' = 32{\cdot}68$.

The relation, therefore, between the density lost and the percentage of sugar, in this instanee, was as 32·68 to 7·69, or as 1 to 0·235. By numerous trials with diabetic urines, of different strength, it was found that the most correct proportion was as 1 to 0·230. The corresponding formula, therefore, was—

$$\text{Sugar, per 100 parts, or } S = (D - D') \times 0{\cdot}23.$$

The accuracy of this method was further tested by operating on diabetic urine diluted with known volumes of water or non-saccharine urine, and on solutions of loaf-sugar in water and in healthy urine.

This method of estimating sugar is especially applicable to medical practice; and the following simple and most convenient rule expresses the result of the analysis:—*Each degree of "density lost" indicates one grain of sugar per fluid ounce of urine.*

Art. 61.—*A New Test for Diabetes.* By Dr. E. C. Bidwell.

(*Boston Med. and Surg. Journal*, Nov. 22, 1860.)

"Technically described, this test is simply the conversion of the saccharine element of diabetic urine into *caramel* by heat. My mode is this: Upon a clean slip of tinned iron, place one or two drops of the suspected material, and hold it over a spirit lamp; the fluid will speedily evaporate, leaving, if the process be arrested at that point, scarcely a trace upon the metallic surface. Continue the application of heat; in a few moments after the desiccation is complete, a spot of an inch or so in diameter, over which the drop had spread with the first ebullition, will gradually assume a rich reddish-brown colour,

with a brilliant lustre, as if coated with a film of varnish or Japan lacquer. A stronger heat produces a darker colour, but the lustre continues till the heat becomes sufficiently intense to decompose the substance. This experiment has succeeded perfectly in my hands, when the urine on trial, previously known to contain glucose, was of specific gravity less than 1030, and still further reduced by the addition of three or four times as much of water. It is thus proved to be a delicate test. I suppose it to be conclusive, also, for I have never yet found any other constituent of urine, normal or abnormal, capable of producing anything at all like the same appearance under the same treatment. The nearest approach is this: some samples of urine not diabetic, when treated in this way, leave a faint, dull, yellowish stain, easily distinguished from caramel by its paler colour, and the entire absence of lustre. I need scarcely add, that a solution of sugar, not diabetic, exhibits almost exactly the same reaction."

ART. 62.—*On Uræmia.*

By Dr. B. W. RICHARDSON.

(*Proceedings of Med. Society of London, Lancet*, Nov. 17, 1860.)

The author first points out the analogies which exist between uræmic poisoning and poisoning by certain common narcotic substances, such as opium and belladonna; and then passes to the description of cases in which sudden symptoms of uræmia had terminated quickly in dissolution. Thence proceeding to the diagnosis of uræmia, he passes through each phase of the disorder, particularising the symptoms with much care. Three points in this part of the paper may be mentioned as of interest. The pupil, Dr. Richardson has observed, is usually fixed in uræmia, and, in most cases, dilated; but this rule is not without exception, for he has seen the pupil contracted to a pin's point in a case of unmistakeable uræmia. There is in some cases, as Frerichs has said, evidence of an excess of ammonia in the breath during the acute attack; but this is not universal, and hence some have denied it altogether. The reason of a difference in this respect in different cases is very simple. In persons suffering from kidney disease, and in whom uræmia is a probable occurrence, the breath at the best of times is charged with ammonia to an extent greater than is normal. In these cases the lung is supplementing the kidney, and the elimination of the ammoniacal product is, in fact, the saving clause. It is when such persons take congestion of the lung, and are subjected to diminution of excretion by the lung, that the uræmic symptoms advance; and in these cases the breath is not ammoniacal during the attack. But there are other examples, where the uræmia is sudden in its appearance, owing to sudden arrest in the function of the kidney simply. Then the breath is markedly ammoniacal in the period of the acute attack. The third fact, as diagnostic of uræmic poisoning from poisoning by the ordinary narcotics, is, that during uræmic coma the patient will often rally and regain all his conscious-

ness for a time, sinking again into forgetfulness, and even dying unconscious in the end.

The cause of death in uræmia forms the matter of another section of the paper, and this is followed by observations on treatment. In the treatment of uræmic narcotism coming on suddenly, in a person not debilitated by previous disease, and not overloaded with fat, Dr. Richardson states his belief that there is one ready and direct remedy, and that is free bloodletting. He has seen a man who had lain three days comatose and unconscious recover, under the immediate influence of loss of blood, so completely as to transact business affairs, and inquire into all that had occurred since he was struck down. Moreover, physiological reasons support this treatment; for the bloodletting not only relieves the body from a portion of the poison, but removes the congestion of the kidney and of the other organs, and gives the permit for recovery, if recovery be possible. Thus, in animals in which artificial uræmia had been produced, the effect of frequent venesection tended greatly to prolong life. That bloodletting should not absolutely relieve in every case is reasonable, for whether relief were obtainable or not, in any case would depend upon the degree of mechanical obstruction in the kidney; for if the obstruction were perfect, no treatment would be possible, seeing that no proceeding could be adopted to supplement the kidney altogether; but if in any instance there should be but partial obstruction, increased temporarily by congestion, then the act of abstraction of blood gives the only chance that remains of removing the burthen from the excreting organ. The last part of the paper dwells on uræmia in its forensic aspects. In many cases, where death is supposed to have occurred from the effects of small doses of opium or other narcotic, Dr. Richardson believes that the cause is attributable to uræmia, and that so-called idiosyncrasies are probably intimately connected with renal disorder.

ART. 63.—*On Uræmic Intoxication.* By Dr. WM. A. HAMMOND, Professor of Anatomy and Physiology in the University of Maryland.

(*American Journ. of Med. Science*, Jan., 1861.)

The conclusions to which Dr. Hammond arrives, after a careful and extensive experimental inquiry, are these:

1st. That the injection of urea, in limited quantity, into the blood of animals, produces a certain amount of disturbance in the nervous system, similar in its symptoms to the first stages of uræmia, but that this condition disappears, if the kidneys are capable of so depurating the blood as to eliminate the toxic substance.

2d. That urea, when introduced into the circulation in larger quantity than can in a limited period be excreted by the kidneys, induces death by uræmia.

3d. That by ligature of the renal arteries, or removal of the kidneys, the elements of the urine, being retained in the blood, render this fluid unsuitable to the requirements of the organism,

and, consequently, induce a condition of system not essentially distinguishable from the uræmic intoxication of Bright's disease, or that caused by the direct introduction of urea into the blood. As, however, was pointed out by Bernard and Barreswil, so long as the urea, or the products of its metamorphosis, are discharged by the stomach or intestines, uræmia does not take place, but, that when these channels become closed, convulsions and coma are produced, and death soon follows.

4th. That the introduction of urea or urine into the circulation of animals, the kidneys of which have been removed, shortens the life of such animals, as Frerichs and others have already shown.

5th. That there is reason to believe that the urine, as a whole, is more poisonous than a simple solution of urea, for, in those cases in which urine was injected into the blood, the amount of urea thus introduced was much smaller than that previously thrown in in a pure state, and yet symptoms of as great intensity followed.

6th. That urea, or the elements of the urine, as a whole, induce such a condition of the nervous system, as strongly to predispose to congestion and inflammation of the viscera, especially the lungs, pericardium, and spleen.

7th. That urea, when directly injected into the blood, or suffered to accumulate in this fluid by extirpation of the kidneys, deranges, in some manner, the process of sanguification, so as to disturb the normal relation of proportion existing between the white and the red corpuscles, and either to hasten the decomposition of these latter, or to interfere with the due removal from the blood of such as are broken down and effete.

8th. That there is no reason to suppose that, under the circumstances specified, urea undergoes conversion into carbonate of ammonia, but that, on the contrary, there is sufficient evidence to warrant the conclusion that no such process ensues. The fact that in the foregoing experiments a larger amount of urea was generally found in the blood taken from the body after death than in that abstracted during life, is, of itself, conclusive against any such hypothesis.

ART. 64.—*Total Suppression of Urine for seven days without any head symptoms.* By Mr. J. M. BURTON.

(*British Med. Jour.*, Dec. 29, 1860.)

CASE.—I was called to see Mr. L— on October 1st, 1860. He had been making a rapid and very fatiguing tour on the Continent during the previous five weeks, and only returned home the night before.

Three weeks previously, he had had a smart attack of hæmaturia, attended by pains in the loins and considerable irritation of the bladder, in spite of which he had continued travelling, though suffering great distress and inconvenience. He had also fallen on the platform of one of the railway stations, grazing the skin from his face and shins, but not otherwise hurting himself. This was subsequent to the attack of hæmaturia. About three years since, he had passed a tolerably sized lithic-acid calculus; and

since that period he had occasionally suffered from some irritation of the bladder, but otherwise seemed in pretty good health.

At my first visit, I found him much exhausted and fatigued by his journey, and he had a teasing cough, which seemed to depend upon irritation of the larger bronchi; but his principal annoyance arose from his frequent calls to pass water, which symptom was especially troublesome at night. His pulse was natural, and his skin cool; the tongue was furred, and his appetite bad. The urine was acid, clear, somewhat pale, in good quantity, and containing a good deal of lithic acid.

After putting his secretions, which were dark and unhealthy, into a right condition, I gave him some mild alterative medicine; and he seemed for a few days to be improving, but then, without any very evident cause, he complained of feeling very ill and weak; his cough and the frequent micturition kept him awake at night; and his appetite entirely failed. Although the secretions were now quite healthy, with a copious admixture of bile, his abdomen began to be distended with flatulence.

October 9th.—He rejected his dinner, but he was not sick on any other occasion. On this day the urine was in usual quantity, but contained no deposit of lithic acid; there was the slightest cloudiness on the application of heat, which disappeared on the addition of nitric acid.

10th.—The quantity of urine passed did not exceed eight ounces.

11th.—I found that he had passed no urine since noon of the previous day. The belly was getting tympanitic, and was perfectly resonant on percussion over the pubic region. I passed a No. 8 catheter into the bladder, and found it perfectly empty. Dr. Owen Rees saw him soon after this, and, thinking it possible that the obstruction might arise from the presence of a calculus in the ureter, we prescribed a warm bath, warm injections, purgatives, and diuretics.

12th.—Mr. South joined us in consultation. At this time the belly had become very tympanitic; but there was a manifest dulness on the right side, extending from the ribs to within the pelvis. There was too much general distension to be able to diagnose accurately the dimensions and probable nature of this tumour; but it afforded a firm elastic resistance to the finger on palpation, and there was no fluctuation to be detected. There was also some slight œdema in the right lumbar region, and there was considerable tenderness on pressure over the edge of the quadratus lumborum. Mr. South agreed in continuing the same treatment.

13th.—Mr. Partridge saw the patient with us, and considered it desirable to pass a catheter, but found the bladder empty. As he found some difficulty in passing the instrument, he introduced his finger into the rectum, and pronounced that the prostate was healthy.

14th.—Mr. South and myself discovered a very great increase of œdema on the right side, and a vivid erythematous blush occupying the space which I have mentioned as being dull on percussion; this extended over the right groin and pubis, and for some distance down the thigh, which was also œdematous nearly to the knee.

16th.—The œdema and redness still increasing, Mr. Lawrence met Mr. Smith and myself, and carefully examined the side, but did not consider that there was any indication for exploring the part. He considered, with us, that it was probable that a deep abscess might be forming, although the absence of constitutional symptoms militated against this view.

18th.—He died at 8·30 a.m., having retained his consciousness to within eight hours of his death.

Up to within twenty-four hours of his decease, he was not more than

usually somnolent; his pulse was never more than 100, generally under 80; and his skin was of the normal temperature throughout.

Sectio cadaveris, twelve hours after death.—On opening the abdomen, the intestines were found largely distended with air, but without a trace of inflammation; nor was there any fluid in the peritoneal cavity. On turning the intestines aside, the liver was found in a congenital abnormal position; its thick margin, instead of resting horizontally in the hollow of the diaphragm, being placed vertically, and resting against the right flank; so that that which corresponded to the left margin of the left lobe lay against the diaphragm, and the right edge of the right lobe was fairly in the right iliac fossa; this accounted for the dull, firm swelling between the margin of the ribs and the ilium. On proceeding to remove the liver and detach the intestines, for the purpose of examining the kidneys and ureters, and cutting through the ascending and descending mesocolons, there was an escape of bloody fluid to the extent of about two pints; and as the ureters were exposed, they were found largely distended, though not full. They must have been wounded, as well as the great veins, in removing the intestines and liver; and their contents escaping, produced a mixture of blood and urine. (The post-mortem examination was, from circumstances, obliged to be performed hurriedly and by candlelight, so that we could not clearly make out the relative proportion of the two fluids.) On passing the hand into the pelvis, the bladder was found firmly contracted, affording to the hand introduced into the pelvis a hard, solid mass; and, on removing this, it was found to be of the size of two fists. On laying open the bladder, the two lateral lobes of the prostate were found much enlarged by a deposit of hard scirrhus; and behind these, in the place of a third lobe, an apparently ulcerated granular extension of the disease, which spread over the orifices, and extended a short distance within both ureters, and rendered them completely impervious; not a drop of water was found in the bladder.

ART. 65.—*On the use of Ergot of Rye in Retention of Urine from paralysis or inertness of the bladder.* By M. ALLIER.

(*Bull. Gén. de Thérap.*; and *Journ. of Prac. Med. and Surgery*, Nov., 1860.)

In cases of this kind, M. Paul Guersant has found the ergot of rye extremely serviceable in the aged inmates of the Bicêtre at Paris; and many other practitioners have arrived at the same conclusion. The evidence which M. Allier selects from fourteen cases is to the same effect. Thus—

"Ergot of rye relieves retention of urine due to mere distension, when it has not yielded to the use of the catheter, and shortens the duration of those cases which catheterism would eventually cure. It is inefficient for retention due to prostatic enlargement, and in no wise promotes the absorption of hypertrophy of that organ. Paralysis of the bladder, consequent upon cerebral disease, yields rapidly to ergot of rye, but the paralysis of the limbs induced by apoplexy is not modified by this remedial agent. The ergot is likewise beneficial in loss of power of the bladder, connected with undetermined disease of the nervous centres, but it is inefficient to cure the paralysis of the limbs resulting from the same cause.

"On account of the transient action of the ergot, this medicine should be given in small and frequently repeated doses. M. Allier prescribes fifteen grains in four powders, to be taken in the course of the morning; after four days, he increases the dose to thirty grains and subsequently to forty-five grains and one drachm. In no instance did the drug occasion any noteworthy accidents."

ART. 66.—*Clinical Researches on the action of Diuretic Remedies.* By Dr. AUSTIN FLINT, Professor of Clinical Medicine in the New Orleans School of Medicine.

(*American Med. Monthly*, Oct., 1860.)

The points to which these researches are directed are simply to observe the quantity of urine and the amount of solid constituents under the use of certain diuretics in different cases of disease. The number of cases is only ten. Of these ten cases, in four the disease was *ascites* dependent on cirrhosis; in three, *albuminuria* dependent on *Bright's disease*; and in three, *subacute rheumatism*. These cases came under observation in the Louisville Marine Hospital, in 1852-3, and in 1855-6.

In making the examinations, the urine passed during the twenty-four hours was preserved, and the specific gravity taken by the urinometer. The amount of solid ingredients was then calculated from the specific gravity and the number of fluid ounces, after the table given by Dr. Bird in his work on urinary deposits.

Acetate of Potassa.—This remedy was given in three cases, all of which were cases of subacute rheumatism, viz., cases 3, 4, 5, and 6. In each of these cases, there was an immediate increase in the quantity of urine and the amount of solids when the patient began to take the remedy. In one of the cases (case 4), the increase in quantity exceeded the increase of solids. In the other cases, the quantity and solids were increased about equally. In one case (case 3), the quantity and solids decreased when the remedy was given in smaller doses, but subsequently both the quantity and solids became greater when the remedy was discontinued. This shows that there may be a liability to error by imputing an augmentation of the urinary secretion, occurring spontaneously in the course of this disease, to the operation of a diuretic remedy. A series of examinations in a number of cases in which diuretics were not given, would be valuable, as showing to what extent changes occur irrespective of diuretics. In another case (case 6), although an immediate diuretic effect from the remedy was apparent, yet both the quantity of urine and the solids became still more increased after the remedy was suspended, and the patient was taking twenty grains of the sulphate of quinia daily. Whether the latter fact be owing to the quinia, or to changes occurring spontaneously in the course of the disease, we cannot say, without researches in other cases to aid in forming an opinion. In this case a drachm only of the acetate of potassa daily was given, and continued for five days, the quantity given in the other cases being two and four drachms

daily. The actual amount of solids and quantity of urine in this case were but little above the average of health, while the patient was taking the acetate of potassa. In case 3 the increased quantity and solids did not greatly exceed the limit of healthy averages; but in case 4 the augmentation, both in quantity and solids, was great, the maximum of quantity being eighty-two fluid ounces, and of the amount of solids eleven hundred and forty-eight grains.

In conclusion, these cases afford evidence of the value of the acetate of potassa as a diuretic remedy given especially for the purpose of increasing the solid constituents of the urine.

Nitrate of Potassa.—This remedy was given in six cases, viz., cases 1, 5, 7, 8, 9, 10. In four of these cases the patients were affected with ascites dependent on cirrhosis; in two of the cases, the disease was albuminuria dependent on Bright's disease. In all of these cases, save one, there was an immediate increase of the quantity of urine and the amount of solids when the remedy was given. In the excepted case (case 8), the remedy was given on three days only, and it appeared to act as a cathartic. The disease in that case was albuminuria, and vomiting and purging were prominent symptoms. Moreover, the remedy was given but a short time before the fatal termination of the disease. The quantity of the salt given during the twenty-four hours, in the different cases, varied from one to four drachms. That the diuretic effect was real, as well as apparent, is shown in one case (case 1), by the decrease of the urinary secretion when the remedy was discontinued, and again an increase when the remedy was resumed. Of the cases of ascites, in all the diuretic effect was moderate. In case 7, the quantity of urine and the amount of solids, notwithstanding the diuretic effect, fell considerably short of the averages in health. In case 1, both the quantity and solids exceeded the healthy limit; the maximum of the former being fifty-six fluid ounces, and of the latter fourteen hundred grains. The same was true in cases 5 and 10, but to a less extent; the maximum of quantity in case 10 was forty-eight ounces, and of solids nine hundred and sixty grains; and in case 5 the maximum of quantity was forty-two ounces, and of solids nine hundred and twenty-four grains. As regards the relative increase of the quantity of urine and the amount of solids in two of the cases of ascites, the augmentation of each was not far from equal; and in the other two cases, the amount of solids was increased more than the quantity of the urine. In one of the two cases of albuminuria, the diuretic effect was very marked (case 9). The quantity and solids were increased equally, the specific gravity remaining with very little variation. The maximum of quantity in this case was ninety fluid ounces; and of the amount of solids, one thousand and sixty-seven grains.

These cases attest the value of the nitrate of potassa, especially as regards the augmentation of the solids in the urine.

Digitalis, Squill, and Juniper.—These remedies were given in conjunction in two cases, viz., cases 8 and 9. In both, a grain of digitalis and squill was given three times daily; in one of the cases, a pint of the infusion of juniper was directed to be taken during the day; and in the other case, the quantity is not noted. In case 8,

these remedies were continued for five days. No diuretic effect was produced. The quantity of urine and the amount of solids were less than subsequently, when the patient was taking only the citrate of iron and quinia. The same is true of the nitrate of potassa, which was substituted for the vegetable diuretics. The disease in this case was albuminuria, which proved fatal, and vomiting and purging were prominent symptoms.

In case 9, the remedies were continued for eight days. In this case a marked diuretic effect followed. The quantity of urine and the amount of solids were increased in exactly the same degree, showing that in this instance these remedies did not act as hydragogue diuretics; in other words, increasing merely the elimination of water. The nitrate of potassa in this case, given subsequently, produced a much more marked diuretic effect, the quantity and solids preserving the same relative proportion. In this case the disease was also albuminuria, the patient becoming well enough to leave the hospital.

These cases are, of course, too few to warrant any important conclusions. The equal increase of the quantity of urine and the amount of solids, in case 9, is, however, a fact of importance.

Iodide of Potassium.—This remedy was given in one case only, a fatal case of albuminuria (case 2). The dose was a fraction over three grains, three times daily. It was given in the latter part of the disease, and continued to the time of death. Vomiting and purging were prominent symptoms. Examinations of the urine for six days showed no diuretic effect. The circumstances were extremely unfavorable for a diuretic effect from this or any other remedy; and, moreover, the quantity of the remedy given was small.

Wine of Colchicum.—In one of the cases of subacute rheumatism (case 6), a drachm of the wine of colchicum was given three times daily, for five days. It produced vomiting the first day, but not afterwards; but moderate purging continued during the time it was given. There was a marked increase in the amount of solids while the remedy was given, but the quantity of urine was not increased. This remedy was preceded by the sulphate of quinia, twenty grains daily, and by the acetate of potassa. The acetate of potassa increased the quantity and the solids of the urine, but both were still more increased while the patient was taking the quinia. The colchicum appeared to render the solids still more abundant, but there is room for the suspicion that this progressive increase may have been due to changes belonging to the course of the disease.

ART. 67.—*On the action of Potash, Soda, Lithia, Lead, Opium, and Colchicum on the Urine.* By Dr. WM. MOSS, of Philadelphia.

(*American Quar. Journal of Med. Science*, April, 1861.)

The experiments related in this paper were made with the design of determining the influence of the above-mentioned substances over

the quantity of the urine, and the amount of its solid, organic, and inorganic constituents, with especial reference to the amount of urea and uric acid. They were all performed upon the author himself during the winter months of 1860-61.

"My age," says Dr. Moss, "is twenty-seven years; height five feet five and a half inches; weight 125 pounds; health good. I regret that it was impossible for me to regulate accurately the quantity and proportions of my food, and the amount of exercise, further than to make them, in a general way, as uniform as possible.* This disadvantage necessarily attends experiments extending over several months, and is common to most of the previous experimenters on this subject. The quantity of urine was determined in cubic centimetres, and the weight of the solids in grammes. The method employed for the determination of the amount of urea, was the volumetric analysis of Liebig. The amount of uric acid was determined by quantitative analysis, as the accuracy of the volumetric analysis of Dr. Scholtz is not as yet sufficiently authenticated. To determine the whole amount of solid matter, I subjected ten cubic centimetres of urine to a gentle heat, in a large-air bath, during forty-eight to seventy-two hours, and completed the evaporation, in vacuo, over sulphuric acid. The residue was accurately weighed, and the whole amount found by simple proportion. By heating the residue, mixed with nitric acid, until the carbon was consumed, and subtracting its weight from the whole weight of the solids, I ascertained the respective weights of the inorganic and organic solids. The specific gravity was determined with a specific-gravity bottle weighed in a delicate balance.

"The medicines were all ingested, with the exception to be mentioned hereafter, at one hour before breakfast, one hour before dinner, and before retiring for the night; *i.e.* at 8 a.m., 4 p.m., and 12 p.m. The urine was collected from 8 a.m. to 8 a.m."

The averages of these experiments are given in the following table:

	Quantity of urine.	Total solids.	Organic solids.	Inorgan. solids.	Urea.	Uric acid.	Specific gravity.
Average of normal urine	801	51·36	41·12	10·22	29·97	·346	1028·61
Acetate of potassa	1200	67·08	44·34	22·71	32·33	·379	1025·27
Acetate of soda ...	1020	57·16	38·59	18·56	29·41	·170	1026·82
Acetate of lead.....	772	50·47	39·13	11·33	27·88	·296	1025·57
Carbonate of lithia	1262	61·32	45·61	15·70	32·16	·370	1018·75
Opium	1175	54·68	42·95	11·70	27·50	·191	1018·35
Colchicum	890	54·98	42·23	12·73	29·75	·329	1025·24

"It will be seen," Dr. Moss proceeds, "on reference to the above table, that the amount of normal urine secreted by me was far below the usual average, which is from 1400 to 1600 cubic centimetres.

* I take two meals daily: breakfasting, *à la fourchette*, at 9 a.m., drinking at this meal strong black tea, and dining at 5 p.m.

During this first series of investigations, the weather was cold, and, with the exception of one rainy and one cloudy day, remarkably clear and dry, with a thermometrical range of from 42° to 55° F.; so that the small amount of water cannot be due to increased action of the transpiratory action. I subsequently repeated my measurements with the same results, the average for three days being 824 cubic centimetres. The normal averages for the solids, urea, and uric acid, are below the medium found by previous observers, but not disproportionately to my weight and size. The high rate of the specific gravity was caused by its unaccountable, and, I may add, vexatious, rise, on the fourth day of the series, to 1036; a number so clearly abnormal that I consider myself justified in eliminating it from the series—the average of which without it would be 1025·18.

"The experiments with soda, potassa, and lithia, were conducted with especial reference to the relative influence of these alkalies over the elimination of uric acid from the system in the gouty diathesis. Under the use of potassa, the excretion of urine was increased by one half, with a notable augmentation in the amount of all its different solid constituents. The soda increased the amount of water, while the amount of organic solids was decreased, and that of uric acid was diminished one half. The augmentation in the amount of inorganic matter is attributable to the egestion of the alkali itself.

"The results of the experiments with lithia are confirmatory of the high praise awarded by Dr. Garrod to the action of this agent. Although taken in infinitely smaller quantity than the potassa, the effects produced by it, with the exception that it failed to render the urine alkaline,* were almost precisely similar. The amount of organic matter excreted during its ingestion was even greater than during that of the potassa, while the difference in their average weights of uric acid was less than a centigramme. Dr. Garrod, I believe, first called attention to the fact that, during the ingestion of lead into the system, the excretion of uric acid is diminished. I also found this to be the case, though to no very considerable extent; but, as it will be seen on reference to the table that the amounts of water, organic matter, and urea were likewise diminished—the inorganic matter alone undergoing no diminution—it is a fair inference that lead exercises no specific influence over the uric acid, and that the decrease is but incidental to the general diminution of organic activity caused by this metal.

The value of the results of the experiments with opium was doubtless affected by the large quantity of water ingested during its administration, and to which we may attribute the increase in the amount of water and solids excreted. Of these last, however, the amounts of urea and uric acid fell—the latter by nearly one half.

"The result of the experiment with colchicum agrees with those obtained by Drs. Krahmer and Garrod—viz., that colchicum is not a diuretic—and differs from that of Dr. Hammond; for, although there was an increase in the quantity of urine and of the organic and inorganic matters excreted, it was mainly in the amount of inorganic

* I have since taken thirty grains of the carbonate of lithia at one dose, with the effect of rendering the urine passed three hours afterwards strongly alkaline.

constituents, and was too inconsiderable to be considered an effect of the medicine, while the amount of urea was unchanged, and that of uric acid even diminished."

(F) CONCERNING THE CUTANEOUS SYSTEM.

ART. 68.—*Clinical Researches into Morbid Pigmentary Changes in the Complexion.* By Dr. LAYCOCK, Professor of the Practice of Medicine in the University of Edinburgh.

(*Medico-Chir. Review*, Jan. and April, 1861.)

The propositions which Professor Laycock proposes to establish in this paper are these:

1. That besides blue and green, of rare occurrence, there are two common well-marked and distinct forms of morbid discoloration due to pigment deposit—the *yellow* or sallow, and the black or *swarthy*.

2. That both yellow and swarthy discoloration of the skin will occur from the action of local irritatants—as heat, light, cutaneous parasitic fungi, blisters, sinapisms, and the like, or in the progress of various cutaneous diseases of the skin and its appendages.

3. That the absence of pigment (leucopathia), as well as its deposit, may be caused by inflammatory and other diseases of the skin, affecting its chromatogenous function.

4. That morbid states of the cerebro-spinal centres will influence the deposit or non-deposit of pigment.

5. That morbid states of the genito-urinary organs in both sexes, acting probably through the nervous system, will determine the election of locality of pigment-deposit, according to the same law by which the development of sexual hair and pigment is regulated.

6. That structural diseases of the abdominal viscera and peritoneum also exercise an influence through the nervous system upon the local deposit of pigment in the skin.

7. That in disease of the supra-renal capsules, the bronzing of the skin, whether swarthy or yellow, is partly nervous, and due to the direct or indirect influence of the capsules or the kidneys and nervous system; partly hæmic, and in so far due to the morbid influence of "dyscrasic" blood.

8. That pigmentary changes in the skin of both whites and blacks may be the *result* of morbid causes, and yet may remain after the operation of the causes has ceased, and assume a physiological character.

9. That although local morbid pigmentation of the skin may occur exclusively from local causes, or the influence of the nervous system, in the majority of cases there is a morbid condition of the blood.

10. That the morbid conditions of the blood associated most commonly with pigmentary changes are characterised by those changes in the blood-corpuscles (leukæmia, leucocytosis) which are observed in cachectic states of a constitutional character (pregnancy, chlorosis,

tertiary syphilis, chronic rheumatism, cancer, &c.), or which are intimately connected with "dyscrasic," visceral, or glandular diseases (of the spleen, supra-renal capsules, lymphatic glands).

11. That the tendency to discoloration increases (*cæteris paribus*) with age after a certain period of life.

12. That the morbid pigment-deposits proper, as distinguished from masses of altered blood-corpuscles, are carbonaceous excretions, and are often vicarious with the suspension or imperfect elimination of other carbonaceous excretions—as the carbonic and lactic acids, and the pigment constituents of both the urine and bile; and are consequently associated with morbid states of assimilation, as well as of elimination (through the skin, lungs, liver, kidneys).

13. That amongst the morbid states of assimilation, the rheumatic and gouty are specially to be classed, as well as those coincident with anæmia.

These propositions are illustrated by many very interesting cases, and established by much able reasoning. Of the cases we take two in illustration of the influence of terror; one in causing sudden blackening of the skin—the other in causing sudden whitening of the hair.

Case 7.—*General melasma from terror; anæmia; discoloration permanent.*—A woman was condemned to death by a Parisian mob during the first French revolution, for using some benevolent expressions respecting the king. The "lantern" (the mob instrument of execution) was let down before her at the moment she was menstruating: menstruation immediately ceased. Her execution was deferred, and soon after (in a few days) her skin became as black as that of a moderately black negro. The tint was deeper on the neck and shoulders than on the face; on the face and chest the tint was the same; it was less deep on the abdomen and legs. The limbs were marbled with white spots, which probably indicated the situation of some previous eruption. The joints of the fingers were blacker than other parts; the soles, palms, and folds of skin in the inguinal region paler. She became "languishing" (anæmic), subject to beating in the head, with sense of oppression and general uneasiness. She died in 1819, aged seventy-five, more than thirty years after the shock, the skin remaining dark until death. The post-mortem examination revealed old cardiac lesions, apparently rheumatic.*

Case 8.—*Sudden whitening of the hair from terror.*—A correspondent of the 'Medical Times and Gazette' having asked for authentic instances of hair becoming gray within the space of one night, Mr. D. P. Parry, Staff-Surgeon at Aldershott, writes the following very remarkable account of a case of which he says he made memoranda shortly after the occurrence: "On February 19th, 1858, the column under General Franks, in the south of Oude, was engaged with a rebel force at the village of Chamda, and several prisoners were taken; one of them, a Sepoy of the Bengal army, was brought before the authorities for examination, and I being present had an opportunity of watching from the commencement the fact I am about to record. Divested of his uniform, and stripped completely naked, he was surrounded by the soldiers, and then first apparently became alive to the dangers of his position; he trembled violently, intense horror and despair were depicted in his countenance, and although he answered the questions addressed to him,

* M. Rostan, 'Nouveau Journal de Médecine,' May, 1819.

he seemed almost stupefied with fear; while actually under observation, within the space of half an hour, his hair became gray on every portion of his head, it having been when first seen by us the glossy jet black of the Bengalee, aged about twenty-four. The attention of the bystanders was first attracted by the sergeant, whose prisoner he was, exclaiming, 'He is turning gray,' and I with several other persons watched its progress. Gradually but decidedly the change went on, and a uniform grayish colour was completed within the period above named."

ART. 69.—*Is true Ringworm contagious?* By Mr. JONATHAN HUTCHINSON, Assistant-Surgeon to the London Hospital, &c.

(*Medical Times and Gazette*, Jan. 12, 1861.)

"The popular belief in the extreme contagiousness of ringworm is of old standing, very firm, and very widely spread. It is also supported by the experience of most dermatologists. One or two authors however (after giving descriptions by which it is placed beyond doubt that they were writing about the disease in question), deny its contagious properties. Thus, one authority writes: 'This disease is not contagious;' and adds, 'that it is not communicable by inoculation.' I am not aware that any evidence is on record supporting the view that it is not inoculable, while there are many facts conclusively proving the opposite. The experiment is one easily tried, and on such a matter the *onus probandi* certainly rests with those who deny it. Mr. Erasmus Wilson, after broaching the theory that the supposed cryptogamic sporules are in reality oil-globules, the result of fatty degeneration of the hair-shafts, has the following extraordinary passage:—'Another consequence naturally follows the admission of the explanation here given, which is, that this disease being inherent in the hair, and being due to an abnormal nutrition of the system, is in nowise contagious. I need scarcely observe, that this is a question of the utmost importance as affecting the peace and happiness of families and the education of youth. The disease occurs as commonly among the children of the wealthy as among the poor; and when the idea of contagion is entertained the scourge is rendered doubly severe.' Thus it would appear that a theoretic conjecture as to the pathology of the affection is to decide this important question, there being no need for clinical investigation as to what is really the fact. Let me ask any one who has glanced ever so cursorily over the cases I have cited whether he would like to try to 'secure the peace and happiness of a family,' or 'promote the education of youth,' by assuring an anxious mother, or the head of a children's boarding school, that the disease in question cannot spread by contagion, and that no precaution need be taken. The clinical proof of the contagiousness of true ringworm is as conclusive as is that of similar nature in respect to scabies."

Art. 70.—*On the treatment of Scabies.* By Dr. Hebra.

(*Prager Vierteljahrschr.*, Bd. iv, 1860; and *British Medical Journal*, Jan. 12, 1861.)

In an account of Professor Hebra's Clinique, published by Dr. Christ. Büllner, the following observations are made with reference to scabies. Of 1297 cases, 1144 were males, and only 153 females. Most of the patients were shoemakers, tailors, or joiners. The phenomena produced by the itch-insect are described as burrowings, vesicles, pustules, and tubercles. The last are most common at places subjected to constant pressure, such as the hips, elbows, and knees. In Hebra's experience, all methods of treatment which do not include sulphur, are more or less uncertain. An ointment which Hebra uses, is composed as follows:

> Sulph. depurat.,
> Olei fagi, āā ℥vj;
> Saponis viridis,
> Unguent. simp., āā lb. j;
> Cretæ alb., ℥v. M.

The patient is well rubbed, night and morning, for two days with this ointment; and during the whole of this period he remains wrapped in a sheet smeared with the same ointment. On the third day he has a bath; and is usually, by this time, completely and permanently cured. This plan of treatment is rather apt to excite an artificial eczema. It is attended by a disagreeable odour, and the confinement and wrapping in the sheet may be inconvenient. To meet these drawbacks, Hebra occasionally has recourse to the following applications:

> ℞ Sulphur. sublimat.,
> Bituminis fagi,
> Cretæ, āā ℥j;
> Saponis viridis,
> Alcohol. rectific., āā ℥ij. M.

This is likewise to be rubbed in twice a day. Its advantage over the former, is, that the patient may go about, and continue to follow his ordinary avocations. The treatment, however, requires several days, and the disease is more apt to return.

The bitumen fagi is the resin obtained from the *fagus sylvatica* or common beech. Sapo viridis is a coarse soap prepared from train oil and solution of potash.

Art. 71.—*Case of severe Urticaria produced by some of the Coleopterous Larvæ.* By Dr. J. Herbert Barker.

(*Pamphlet*, 1861.)

In the remarks which accompany this interesting case, Dr. Barker adduces evidence to show that similar effects are produced by more than one species of the hairy larvæ, and that these effects are in all

probability due (as in the case of the sting of the actinæ or sea-anemones) to the mechanical irritation arising from the implantation in the skin of certain cells or hairs, rather than to the action of any special poison, as formic acid.

Case.—In the evening of the 30th of June last, I was sent for to a young lady who was said to be suffering from a sudden and serious eruption upon the neck and face. I found my patient labouring under a severe form of urticaria, which completely covered the face, forehead, and neck. Indeed, except at the margin of the eruption, in the region of the clavicles, and about the shoulders, the entire surface was covered with one wheal or raised circle, of a pale colour, tumefied, and hard. The itching was intense and almost unbearable. The paleness of the eruption, diffused over all the features, unaccompanied with the slightest streak of redness, except about the clavicles and shoulders, together with the general tumefaction of the surface, gave a very singular and unusual appearance. The lower limits of the eruption were very irregular and patchy. The margin of the wheal referred to was an irregular line extending anteriorly from one shoulder to the other, along the line of the clavicles and upper border of the sternum; below this were insulated pale wheals, surrounded by margins of intense redness. The upper wheals, being larger and more irregular, were shaded off into smaller and more regular-shaped patches mingling with the healthy surface. At this visit, the tumefaction had not closed the eyelids.

After a careful examination of the condition of my patient, my attention was directed to the cause of this singularly acute development of urticaria; and I gleaned from the patient herself, and from her mother, the following history. At three o'clock p.m., she had left home in perfect health, for a walk in the country. During this walk, she had picked up by the hedge-side several specimens—a handful—of hairy caterpillars; and it is worthy of remark, that she wore a pair of thread gloves. As she was returing home, between four and five o'clock, she rubbed the side of the nose and the chin with one of her hands; and immediately afterwards the most intense itching commenced in these parts, and rapidly extended over the face, neck, and scalp, with some violence. From time to time she took off her bonnet, and very considerably disarranged her hair. Soon after five o'clock, she reached home, when her appearance somewhat alarmed her mother, who immediately sent for me.

After hearing this statement, I had no doubt that the eruptive attack depended upon handling the creatures which she had collected by the hedge-side. This was also the impression of the mother, who had thrown away the caterpillars. The hands and arms were not affected. A lotion of solution of the diacetate of lead was prescribed; and the surface was directed to be constantly bathed with it warm, by means of a sponge. An aperient powder and a cooling saline mixture were also prescribed.

At nine o'clock in the evening, I saw my patient again. The tumefaction about the nose had increased, and she could not open the eyelids. The eruption had not extended superficially. The pulse was quick. The itching was relieved during the application of the warm lotion. The use of this was ordered to be continued freely during the night.

On July 1st, at 10 a.m., I found that she had had but little sleep during the night. The itching was only subdued by the constant and vigilant application of the lotion. The tumefaction was now considerable; the surface very pale, hard, and tense; and she was unable to open her eyes. The redness at the lower boundary of the eruption was as vivid as ever. The pulse was still quick; the tongue furred; there were thirst and loss of appetite. The bowels

had acted freely. I ordered a farinaceous diet, and continuance of the saline medicine.

At 8 p.m. I saw her again. She had slept for a short time during the afternoon. The tumefaction was still considerable, and she was unable to open the eyelids; but the surface appeared to be somewhat less tense, and the lower marginal redness less vivid. The itching was somewhat less. The medicine and application were continued.

On July 2d, she was altogether better in the morning. The swelling of the surface had diminished, and she could slightly separate the eyelids. The marginal redness was not so intense, and the febrile disturbance was much subdued. She was ordered to continue the use of the warm lotion occasionally, and the saline medicine at longer intervals.

On July 3d, she could open the eyelids, and was in every way better. After this date, she made a rapid convalescence; but there was exfoliation of the skin over the entire surface affected.

ART. 72.—*A case of "Bloody-sweat."*

By Dr. T. KING CHAMBERS, Physician to St. Mary's Hospital.

(*Lancet*, March 2, 1861.)

The literature of this affection is very scanty, but what little there is will be found fairly sketched in the clinical lecture from which we take the present case. Dr. Chambers does not know whether we ought to call "bloody-sweat" a disease of the womb any more than a disease of the skin. He thinks, also, that blood-letting is the most efficacious treatment—most efficacious in the form in which it is known to produce the most powerful physiological effect, viz., in small, repeated doses, and as close as possible to the seat of action—that is, on the spots affected; and that no other remedies are as yet known to be of any advantage.

CASE.—This patient, Henrietta K—, now aged twenty-seven, is the only child of a mother who died aged forty-five, of consumption; her father is alive and well at seventy-eight, a hale, tall, fine-looking old man. Her half-brothers are also tall and strong. She continued to grow to the age of fifteen years and a half, when she had scarlet fever, and this seems to have stopped her growth, and weakened her much. Though not absolutely ill, she was constantly complaining of headache and indigestion, and the catamenia did not appear. At the age of eighteen this delay in the uterine functions attracted the notice of an aunt, who persuaded her to have leeches applied by means of a tube to the uterus, and to take internal remedies. No immediate effect followed, but about a year afterwards, the catamenia occurred once. Her general health did not improve; she constantly suffered from want of appetite, cough, pains in the chest, and a feeling of debility. Her appearance, however, was that of robust health. Three years and a half afterwards, when she was twenty-three, the same treatment was adopted again, and was again followed by the reappearance of the catamenia for one period only. At this time commenced in the skin of the face the peculiar symptoms the course of which I will describe. She feels first a peculiar soreness and tenderness of an isolated spot, which enables her to predict that in the course of a few hours an eruption is going to commence. The first appearance of this is an erythematous blush, sometimes slightly raised above the surrounding surface, but not so much as in erysipelas. After an uncertain time, seldom

more than a few hours, there may be detected a scattered crop of fine vesicles, like sudamina, mixed with a fine serous dew, uncovered by any pellicle. This never lasts long enough to form colourless drops, for quickly it becomes blood-stained, and then little points of blood are seen oozing out, sometimes so slowly as to dry and form a scab, sometimes collecting into great thick gouts, and trickling in a ghastly way down her face. The eruption runs through its stages quickest when she is in bed, and especially during sleep. Suspecting from the strangeness of this story that there was some collusion, I had the bed watched, and the nurse saw the blush come, and the blood ooze out in the manner described while the patient was fast asleep. If rubbed, washed with water, or otherwise interfered with, the bleeding is much increased and prolonged; but if left alone to dry in a scab, it stops in a week or ten days, usually, however, to be succeeded, before it is quite recovered, by a similar eruption in another place. Sometimes, at irregular periods, there was an interval of a week or a fortnight; sometimes the cutaneous phenomena were replaced by bleeding from the nose, sometimes by vomiting of blood, but never by hæmorrhage from either lungs or bowels. These symptoms continued nine months, and were relieved by anticipating the eruption of blood, with leeches applied to the spot where it was expected. The discharge became serous, then was like little blisters, and finally ceased when her health was re-established by the sea air of Margate.

She continued well till last September, when she was admitted here as a mild case of erysipelas of the face. It really looked exactly like erysipelas; but it puzzled us a good deal when it began to bleed, and has continued to puzzle us ever since, as regards its nomenclature, pathology, and treatment. She was seldom seen free from cutaneous hæmorrhage from that period till four weeks ago, but it has varied a good deal in violence. During this attack, the face has not been the only part affected. When she lies down much in the day, that, indeed, is almost always the locality where it has appeared; but when she is about, the legs and thighs have exhibited like appearances; both forearms, too, and once the chest, were attacked. The loss of blood, however, was less than on the brow. Examined under the microscope, the fluid exuding from the skin contained blood-discs in a natural state—blood-discs with roughened edges and shrunken, much granular matter, dark, fatty-looking specks, and scales of epidermis. It did not coagulate into rolls. Blood drawn from a prick in the finger looked perfectly natural, and coagulated into rolls, leaving the usual number of pale globules free. She has twice thrown up from the stomach about half a pint of dark, brownish-purple, sanguineous fluid, and I have occasionally seen her pocket-handkerchief stained with blood reported to have come from the nose. She states that she has been hysterical for the last year, and has had occasional paroxysms of crying and low spirits during her residence here, but with that exception there are no visible disorders of the bodily functions. The action of the bowels is free, the urine pale and sufficiently copious, the appetite very small, especially for meat. But in spite of the little she eats, the constant loss of blood by the disease, and a persistence in a very lowering treatment, she has got very fat—pale, it is true, and flabby, but decidedly fat—and not weaker in muscular power than on admission. In the last month, during which her ailment has been declining, she has been less hysterical, and had somewhat more appetite. She tells me that a similar increase of flesh occurred during her last illness, three years ago. There is no leucorrhœa, and examination per vaginam fails to detect anything abnormal in the parts which can be explored with the finger. She complains of pain, and becomes hysterical during the process. The lungs and heart appear quite healthy.



As regards the effects of treatment: *carbonate of iron, gentian,* and *cinchona* seemed to increase the tendency to hæmorrhage, and did not improve the appetite; only short trials of them, therefore, were made. *Alum baths, alkaline baths,* and *cold shower baths* seemed to have no influence at all. Internally, *alum* and *sulphuric acid* were equally inert. *Valerian* did not make her a bit less hysterical.

She was bled three times, and after each bleeding successively there was a decided improvement in the quantity and quality of the eruption. Four times there were leeches applied to the groins, but I could not trace any benefit to that. But when leeches were applied to the spots affected, they certainly arrested the hæmorrhage at that spot, and diminished its future violence elsewhere. She had leeches applied in this way, to one place after another, thirteen times during the month of December, making seventy leeches in all, in addition to twenty-four ounces of blood taken by venesection. Yet, though bloodletting has been thus freely employed in the way most calculated to cause debility—namely, in small and repeated quantities, she has gained power and vigour, got less hysterical, and improved in every way, at the same time that her cutaneous hæmorrhage has been gradually diminishing. For a few days, while convalescing, she had a spontaneous diarrhœa.

Contemporaneously with bloodletting, I have employed *aloes* and *oleum sabinæ* in various doses; and consequently upon that treatment the catamenia occurred once six weeks ago, and flowed for five days. No immediate lessening of the cutaneous hæmorrhage followed the establishment of the uterine function; it had begun to improve before, and has continued to improve since, so that it is now apparently vanquished, and at last I have made the woman an out-patient, with directions to continue the aloes and savin every night till the catamenia again occur, and to be in the open air as much as possible. I hope also to persuade her to be let blood now and then.

PART II.—SURGERY.

SECT. I.—GENERAL QUESTIONS IN SURGERY.

(A) CONCERNING WOUNDS AND ULCERS.

ART. 73.—*A remark on Epithelial Cancer.* By Mr. JONATHAN HUTCHINSON, Assistant-Surgeon to the London Hospital.

(*Medical Times and Gazette*, Nov. 10, 1860.)

"IN Professor Virchow's valuable work on the theories of cell-pathology are some statements which illustrate in a strong light the danger of error incident to all special studies. The following statement, quoted from page 485 of Dr. Chance's translation, contains assertions which certainly could not have emanated from a pathologist well acquainted with the facts which Clinical Surgery brings before us. Using the term "cancroid" as synonymous with epithelial cancer, the Professor writes:—"Cancroid remains for a very long time local; so that the nearest lymphatic glands often do not become affected until after the lapse of years, and then again the process is for a long time confined to the disease of the lymphatic glands; so that a general outbreak of the disease does not take place until late, and only in rare instances. In cancer proper, the local process is often very rapid, and the disease early becomes general." I select this statement for a few words of comment, for the double reason that, in the first place, it emanates from a high authority, and is likely to obtain extensive credence; and secondly, because it is probably in accordance with a widely diffused belief. The idea that epithelial cancer is less truly a cancer, and is much slower in its processes than the other forms of malignant disease, is very generally prevalent, and induces—as all errors must—consequences which are to be regretted. Let any one collect together all the recorded cases of epithelial cancer of the tongue not interfered with by the surgeon, and compare their average duration with that of cases of scirrhus of the breast; and I shall be greatly surprised if the advantage is not on the side of the latter. There would be no objection to the same comparison between epithelial cancer of the lip and scirrhous cancer of the breast, excepting that the data are not obtainable, since almost all lip cancers are excised. Medullary cancer of the testis is, perhaps, generally considered the very type of a rapid and acute form of cancer; yet it may, as far as any evidence is as yet on record, be doubted whether even it destroys the life of the patient in a shorter average period than does epithelial

cancer of the tongue. Nor is epithelial cancer much less malignant when it attacks the penis or the female genitals, or other parts of the general cutaneous surface than when the tongue is its site. The estimation of its average duration is, however, made with much more difficulty in regard to the latter than in the instance of the tongue, since cancers in these situations are generally submitted to operation.

"The erroneous impression which prevails as to the slow rate of progress of epithelial cancer, and which, as seen above, is adopted by the Berlin Professor of Pathology, owes its existence to three ources of fallacy:—1st. The grouping together of epithelial cancers with rodent ulcer,—a disease histologically and clinically very different from it. 2d. The fact that the majority of epithelial cancers occur on exposed parts easily accessible to the knife, and are, therefore, usually much retarded in their course, if not cured, by the surgeon: and, lastly, to forgetfulness of the fact that in estimating the duration of an external cancer the patient usually dates from the first appearance of an ulcer or warty growth, while in the case of scirrhus of the breast or medullary of the testis a considerable period is often omitted because the tumour was not found until it had attained a certain size. Now, in fairness, the duration of an epithelial cancer of the lip, for instance, ought not to be estimated from an earlier period than the time when the sore took an unmistakeable character. There is good reason for believing that with many epithelial cancers induced by external irritation, a *precancerous stage* of indefinite duration occurs. Of this the well-known soot wart which precedes cancer scroti is the best example.

"But, while contending that Virchow's statement as to the slow progress of the original sore in epithelial cancer is based upon clinical inaccuracy, I must, in an especial manner, also controvert his assertion that the progress is still slow even after the glands are attacked. It is perfectly true that we rarely see this form of malignant disease pass beyond the lymphatics; but the rate of growth and of its destructive processes in these structures is often very rapid indeed."

ART. 74.—*On the treatment of Suppurating Wounds by sponges steeped in a chlorinated solution.* By Dr. HERVIEUX.

(*L'Union Médicale*, Oct. 25, 27, and 30, 1860; and *Med.-Chir. Rev.*, Jan., 1861.)

In a series of papers, Dr. Hervieux maintains the efficacy of sponges steeped in a chlorinated solution as an application to suppurating wounds; and, after quoting the authority of many surgical authors in favour of this method of treatment, and recording the results of his own experience, he arrives at the following conclusions:—1. The permanent application of a sponge steeped in a chlorinated solution to the surface of severe suppurating wounds has the effect of transforming them into healthy-looking sores of a vermilion tint, free from exuberant fungous granulations and from suppuration. 2. While this mode of treatment suppresses the

suppurative process, it favours cicatrization, which is never more regular and more certain than in the absence of suppuration. 3. This application resolves in the negative the question whether suppuration is the method employed by nature to repair the physical lesion inflicted on the living parts. 4. Among all the disinfectants of suppurating wounds there is none more efficacious than the sponge soaked in a chlorinated solution, because it suppresses the very source of fetor,—namely, suppuration and its products. 5. With very few exceptions, this application causes no appreciable irritation on the affected surfaces, or on the surrounding parts. 6. This application is most advantageously employed in the treatment of phagedenic gangrene, of the eschars which succeed to severe fevers, of eczematous, scrofulous, or bony ulcers, of hospital gangrene, of perineal laceration, and generally of all suppurating wounds of an unhealthy character.

Art. 75.—*On the treatment of Rattlesnake-bite.*
By Dr. S. W. Mitchell.

(*North American Med.-Chir. Rev.*, March, 1861.)

The course of treatment recommended by Dr. Mitchell in this paper (which is the record of an elaborate investigation into the action of all the best known antidotes) may be gathered from the following quotations:

"The disease caused by the venom is sometimes so prompt and terrible that it is impossible to rouse the system through the stomach, and this is doubly difficult when vomiting becomes one of the prominent symptoms of the general prostration. Under these circumstances, enemata of brandy may be used, and inhalations of hot alcohol or even of ether resorted to, in order to re-excite the flagging powers.

"When called to a patient who has been bitten by a rattlesnake, the physician should at once ligate the limb with a *broad* band, as tightly as may be needed to check the circulation, while wherever it is possible cups should be also used immediately over the wound. The question of immediate excision or ablation of the part will be then determined by considerations already before the reader (local treatment). Setting these means aside, the iodine treatment, as limiting the local disease, may be then resorted to; but if, as is usually the case, there is no instrument at hand to make possible this treatment, incisions and the actual cautery are the final resort. Meanwhile, stimulus in some shape should be given, and when the excitement thus obtained is sufficient, the finger should be laid on the pulse and the band loosened. As the system becomes depressed, the ligature is once more to be drawn tighter, and, with continued use of stimulus, the economy prepared for another dose of the venom, which is thus to be antagonized little by little. Finally, it will be requisite to shift the band higher up the limb, to avoid the too great constriction of the damaged member. The further management of the case, with regard to stimulus, must be left to the phy-

sician, who will remember that in most cases of severe poisoning he has to deal finally with a blood which has lost a part or the whole of its power to coagulate. He may find in the mineral acids, tonics, as quinine, and the continued use of stimulus, the necessary means for carrying his patient through the later stages of the malady."

ART. 76.—*On the Bites of the Venomous Serpents of Australia.* By the Hon. W. BLAND, President of the Medical Association of Sydney, &c.

(*Australian Medical Journal*, Jan., 1861.)

After some preliminary remarks upon the snakes of Australia, Mr. Bland proceeds:

"Are any of the venomous species of Australian snakes as deadly as the venomous snakes either of Asia, Africa, or America?—I am inclined, as far as I have seen or heard, to consider them equally so, but there is this point in favour of the former, namely—the punctures made by the former are, as far as I have ever witnessed or heard, attended with little or no pain, beyond what would be inflicted by the slight puncture of the common thorn; so much are the sensations alike, indeed, that I have known thorn punctures, in one or two instances, cut out by mistake, by the patient, for the latter. They may, notwithstanding, however, with a little attention, be readily distinguished, if only by the peculiar smoothness of the fang-punctures, together with their normal distance from each other, and their freedom, as far as I have observed, from any mark of blood, while, to assist in making the distinction, the patient, for the most part, can point to the spot, or near to it, where he thinks the fang-punctures were felt at the time of the bite.

"The principal symptoms that indicate the action of the poison on the sufferer are the following:—Great prostration of strength, and almost irresistible somnolency. Ptosis of the right upper eyelid occurred in one case from the bite of the gold-coloured or yellow snake; and, in another case, from the bite of the same species of snake, a feeling of intense, insupportable oppression in the left side of the chest, particularly in the cardiac region: this occurred about seven or eight hours from the time of the bite, nearly the whole of which time the patient had been under active treatment.

"Subjoined is a description of that treatment which I have hitherto found the most successful, with its latest modifications, viz.:

"1st. The immediate application (where practicable) of a ligature above the bite—this to be put on moderately firm, but *not painfully* tight. The importance of this measure was well illustrated by the following case:

"Captain Hovell, about the close of the year 1819, brought to me, from Narralling, about thirty miles from Sydney, a servant of his, bitten in the leg by a black snake, in whom hitherto not one symptom of poisoning had made its appearance, and yet almost immediately after my removal of a ligature which had been placed round the limb above the bite (the bitten part having been just removed by

excision), the symptoms of poisoning occurred in all their intensity, and would no doubt have rapidly proved fatal but for the care taken to keep the patient perpetually walking, and the use of stimulants—eau de luce—the supposed specific at that time, but, more particularly, spirits of turpentine.

"2d. Immediately after the application of the ligature (where applicable), the complete removal of the bitten part by excision; this is readily effected by the aid of the small-toothed forceps, if at hand; with this the part bitten is slightly raised, and then cut out with a bistoury, or other sharp instrument. If procurable, and the shape of the part will permit, a cupping-glass is now applied, and blood drawn to the extent deemed necessary, so as to abstract as far as possible any poison that may yet remain in the vicinity of the cut; or, the wound is sucked, care being taken that there is no crack or abrasion on the lips of the person who performs that office. Meantime, tonics and stimulants are given, and repeated from time to time *ab initio*, as may seem necessary; these to consist of the volatile alkali in any form that may be preferred, but never in doses unpleasant to the patient: hence one of the minor though important advantages of being enabled from time to time to vary the stimulants that are used. Spirit of turpentine, from ʒij to ʒiv, or the same by the rectum, or even in larger doses. Wine, *e. g.*, champagne, claret, sherry, and, as a tonic, strychnia, in the usual medicinal doses, or in an infinitely more dilute form.

"By the due adoption of the above means—the necessity for keeping the patient in perpetual motion is to a great extent, if not entirely removed; and, I may add, that, whenever the case has come early under treatment, such as I have described, I have hitherto met with no case in which perfect recovery did not take place, and that, too, utterly free from those distressing "sequels" which have been experienced in the few cases (perhaps without exception) which have appeared to recover spontaneously, or by other means.

"In the above statement two very peculiar symptoms are mentioned—ptosis of the right upper eyelid, an indication, perhaps, in that case, of the action of the poison on the brain, or, at least, on some of the cerebral nerves; and, in another case, an insupportable feeling of oppression in the left side of the chest—particularly in the region of the heart—evidently, perhaps, the direct action of the poison on the heart, and more probably on the blood itself—they were both of them cases of bite by the same deadly species of snake (the gold-coloured or yellow snake). The case in which ptosis occurred was only the second case of snake-bite which I had at the time met with (some forty years since), when the treatment was altogether unsettled, or consisted of little more than the exhibition of the eau de luce, the Tagore pill (when obtainable), or medical doses of some solution of arsenic, with the keeping of the patient in perpetual motion; under which treatment, with the exception of the walking, which the patient, a boy twelve years of age, was too prostrate to attempt, this case proved fatal in about twenty-four hours. In the case of cardiac oppression, V. S. was had recourse to, and about sixteen ounces of blood was extracted, with immediate and most

beneficial results; not only the removal of the symptoms for which it was employed, and which evidently, but for this timely relief, must have been rapidly fatal, but with almost immediate and complete recovery of the patient. This case was published by me in the 'Lancet.'

"I have mentioned the remedies that have been used with success in these very alarming cases, and which at one time were almost invariably fatal. But whether there is any difference in the venom of the different species of Australian snakes, that would be benefited by a decided difference, or even any modification, of the treatment, I have no sufficient data from which to determine; and I have in consequence treated such cases with invariable reference to the symptoms that actually occurred. Thus: where stupor and somnolency were urgent, notwithstanding the due use of stimulants, walking and frictions were had recourse to, with only such intervals as appeared compatible with the safety of the patient; but, under the most guarded caution, not to induce fatigue, and much less anything approaching to decided weariness or exhaustion, under which, I have no doubt, the suffering of the patient has not unfrequently been greatly aggravated, but much injury and danger have been incurred, so much so, that, in one case, but to which I was not called till the patient was *in extremis*, there could be no doubt that this excessive walking had produced the death of the patient. Again, where the pulse had become tumultuous and was morbidly hurried, the spirits of turpentine was the immediate resource, followed from time to time between the doses with some more grateful stimulant; and the circulation became at once reduced to its healthy rhythm. A variety of remedies are above enumerated, the list of which may very possibly be greatly extended—a matter of no small importance in reference to an accident which brooks little or no delay in looking for means of relief. Of these remedies, however, the spirits of turpentine has appeared to me, hitherto, as the most reliable.

"In the case of a horse bitten by a black snake, in which the poison had evidently begun to act, and would no doubt, as is invariably the case with the horse under such circumstances, have been rapidly fatal, a pint of spirits of turpentine was given to the animal by the mouth, followed with its complete and almost immediate recovery.

"The bite in this instance was on the tip of the nose, which became immediately much swollen—the only case in which I have known swelling occur from snake-bite, and which I have no doubt was attributable to the well-known peculiar irritability of the part bitten. The swelling in this case also soon and completely subsided, without being attended with, or leaving behind it, any injurious effect.

"I am inclined to think the eau de luce acts not only as a stimulant, but as a chemical agent; and, if so, as from its pungency its exhibition can be only very limited, it might very probably be replaced wholly or in part with advantage by the fixed alkalis saturated with the carbonic acid—the patient being placed under the simultaneous influence of stimulants, or stimulants and tonics."

Art. 77.—*On the treatment of Frost-bites.* By Dr. R. Nelson, New York.

(*American Medical Monthly*, Jan., 1861.)

Dr. Nelson's principal object in this paper is to correct the popular belief that the best treatment of frost-bitten parts is *rubbing* with *cold snow*.

"*First.—Rubbing.*—Its advocates may possibly say rubbing will set the blood in motion, and help to generate heat to thaw the part—false. A frozen part is a solidified one, and the blood usually there is now absent; but even if present, it could not be made to circulate until thawed; therefore, this first act is worse than useless, since it cannot effect the object intended. The juices that give pliancy and compressibility are frozen into minute crystals, more or less approximated. In this state, bending or compressing (the effect of rubbing) will produce innumerable small fractures in the tissue, which, on becoming thawed, will leave as many lesions, added to the one created by the simple congelation; an accident sufficiently severe in itself. The friction cannot give fluidity to that which is solid, as is a frozen part, and by its alternate pressing and kneading will produce mechanical interstitial damages.

"The *second* error is the *indiscriminate quality of the snow*, as regards its temperature, and is a more serious one than that of friction. Frost-bites can scarcely happen at a less temperature than zero, or 30° to 25° below the freezing point, and snow at such a time must be at an equally low temperature. If snow so cold be applied, it cannot contribute caloric to thaw the frozen part, but must abstract caloric from it, and tend to either keep it frozen or freeze it deeper than it was before the application.

"*Case* 3.—Two gentlemen driving in a very cold day, one of them froze the tip of his thumb; his companion told him to rub it with snow. He drew his thumb out of the mitten, and with the other hand (a mitten on) picked up the cold snow from the roadside, which he vigorously rubbed on his thumb, but it would not thaw! with this infallible remedy. He continued to repeat the dose as they rode along, and the thumb continued to freeze more and more; at last an acquaintance met them, and apprised them of the error they were committing; but too late, for already had the first and part of the second phalanx frozen, bones and all, to the ultimate inevitable loss of the limb. The day was cold, below zero, and the temperature of the top snow the same, of course. Since the tip of the thumb froze through the mitten, it would have taken little reflection to know that snow as cold as the air that froze through the mitten, when immediately applied would freeze the part more. But who is there that reflects or reasons on a dogma? It is accepted as a matter of course, and the more readily when it is incomprehensible.

"*Another case*, 4, *a contrast to the foregoing*.—Two gentlemen riding side-by-side in extremely cold weather, well muffled up. One of them had his cheek slightly exposed to a blast that blew under the peak of his cap. He felt the sudden sting that precedes, or rather

accompanies freezing, and well knew what had happened, and what to do, for he was a reflecting man. The driver, looking round, apprised him that his cheek was nipped—never mind, drive on, was his reply. All he did was to crouch his face a little lower into his shawl, for it was too cold to raise his arm and hand from the tucking in. He trusted to the shelter he now got, and the rising heat from his body, to *slowly* restore the part. The road took a turn and the wind ceased to scathe the frozen cheek, which now *gradually* thawed by the ascending heat from his body. In a little time the cheek began to smart; to remedy this he contrived to expose his cheek to a little more air, and so cooled off the rising reaction and too rapid thawing. When he reached the halting-place, an hour after, all was well, only a little tender, to the surprise of his companion and the driver, who could not conceive how a frost-bite could be recovered from without having recourse to the inevitable rubbing and snow.

"It is easy, now, to perceive how a frozen part is to be thawed. It must be borne in mind that the particles last frozen are those which must be first permitted to recover, and prevent the next outward layer from doing so until the inner one has, which can only be done by retarding the thaw of the outside. How is this to be done?

"By applying such a degree of cold as will not increase the freezing, at the same time prevent it from thawing until it is reached by the natural thawing from within outwardly. This object is easily attained; for where frost-bites happen there is at hand either snow, ice, or frozen earth. When the weather is very cold the snow or ice will be nearly of the same low temperature—10°, 20°, 30° below zero, Fahr. Such snow is too cold; it will freeze the part more than it was before its application. But it is easy to get warmer, or less cold snow—snow of a suitable temperature—such as will not additionally freeze. This suitable temperature is barely the freezing point, 32° above zero of Fahrenheit. It is easy to raise the temperature of snow, however cold, to this degree, by simply putting a few handfuls into a basin of water, which will instantly bring it to the temperature needed. When there is no snow or ice, frozen earth may be substituted. The water will be brought to 32°, the exact point to permit slow thawing from *within*, as already mentioned. If it be the fingers or toes that are attacked, immerse them in a basin full of this slushy snow, ice, or mud water; should it be an ear, or nose, or cheek, apply this water by means of a napkin, frequently dipping it so as to keep it at this barely freezing (or thawing) temperature, until colour and softness return to the part. After that, less cold water may be used, so as to keep down the inflammatory congestion that is likely to follow. While this slow process of thawing is being effected, avoid that rubbing and kneading, the error of which has already been noticed. When the part has thawed, and is not dead, the epidermis will often blister like a scald. Prick these blebs, as they form, and dress wtth *basilicon* rather than with cerates, and exclude the air and light, since these increase the inflammatory state.

"When the congelation has penetrated deep, the part will slough, however judiciously it may have been thawed. Should the freezing

have reached a bone, as a phalanx, even slightly, it will never recover (as in Case 2)."

ART. 78.—*A case of Amputation beneath the Trochanters, in which the Arteries were secured by Acupressure Needles.* By Dr. P. D. HANDISYDE, formerly Surgeon to the Royal Infirmary, Edinburgh.

(*Edin. Med. Journal*, Dec, 1860.)

The case is that of a boy, æt. 14, a "roadsman," in a colliery, whose leg was crushed between a car and the tramway. Amputation was necessitated by the setting up of spreading gangrene. The femoral artery, at its giving off the profunda branch, was relieved from the pressure of the needle at the forty-ninth hour after the operation; and recovery took place without any drawback. Speaking about the use of the needles, Dr. Handisyde says—

"On the withdrawal of the acupressure needles, no suppurating points presented; and the punctures healed kindly.

"Although the profession generally seems, as yet, scarcely prepared to admit the advantages which Dr. Simpson seeks to attach to his discovery of acupressure, yet, in due time, such additional experience will be acquired, that none, I believe, will hesitate in admitting the accuracy of his inductions. From the use that I have made of it in M'——'s case, without having seen the process previously employed on the dead or living body, the performance of acupressure seems to me to be free from all difficulty. I may add, that the hæmorrhage from the divided vessels was arrested with greater expedition in this way than by ligature; for, in closing the bleeding orifices by needles, I wholly dispensed with an assistant: and, in employing needles, I further effected a saving of blood as well as of time. We may hence reasonably conclude that the shock to this patient's system was thereby very probably lessened, and his recovery promoted.

"The face of the stump, in this case, seemed to me to close more speedily and kindly than in other cases of amputation equally high up the limb, in which I have had to deal with ligatures and their accompanying arterial sloughs. It may be objected, indeed, that M'——'s case presents no such favorable feature; in so far as, between the fifth and the ninth days after the operation, purulent collections had formed. These, however, seemed due to the previous irritation and swelling in the lymphatics of the upper third of the thigh and the inguinal glands,—the deep probably, as well as the superficial,—dependent on the spreading of the gangrene.

"In the words of Dr. Todd, who was the surgeon in ordinary,—'The line of cicatrization of the flaps was healed by the *first intention*. The two collections of pus were quite separate from each other; the posterior one was deeper seated than the other. Whilst being formed they caused and kept up the fever, which subsided immediately on their being evacuated. To evacuate the pus, I used a bistoury in separating the recent adhesions of the flaps.'"

ART. 79.—*Transfusion of Blood in cases of exhaustion from profuse Suppuration.* By M. NEUDÆRFER.

(*Lancet*, March 16, 1861.)

M. Neudærfer has just published, in the 'Osterr. Zeits. für Pract. Heilkunde,' five operations of transfusion by which he hoped to instil life into patients dying from debility and hectic in consequence of profuse suppuration following from gun-shot wounds. The relief was in all but temporary, and the patients died three or four weeks after the operation, which were all conducted with the proper precautions and apparatus. M. Neudærfer was disposed to continue the experiments, when the transfusion, tried upon a sixth patient, proved fatal a little time after the operation. This accident, attributed to the gouty nature of the blood injected, has, however, caused M. Neudærfer to give up any further experiments of the kind.

(B) CONCERNING FRACTURES AND DISLOCATIONS.

ART. 80.—*Contributions to the subject of Compound Fracture, being an analysis of* 302 *cases.* By Mr. BRYANT, Assistant-Surgeon to Guy's Hospital.

(*Proceedings of the Royal Med. and Chir. Society*, Feb. 12, 1861.)

The cases analysed in this paper occurred in the practice of Guy's Hospital during the last twenty years. Of these cases

17 or	5·6 per cent.	were of the	thigh
193 or	63·9	„	„ leg
35 or	11·5	„	„ arm
57 or	18·8	„	„ forearm,

11 out of the 17 cases of compound fracture of the thigh proved fatal, or 64·7 per cent. 74 out of 193 examples of compound fracture of the leg were fatal, or 38·3 per cent. 4 of the 35 cases of compound fracture of the arm died, or 11·4 per cent. And 7, or 11·2 per cent. of the 57 cases of compound fracture of the forearm. Of the whole number of 302 cases, 96 were fatal, or 31·7 per cent. In these 96 cases, it appears that in cases subjected to amputation pyæmia was twice as fatal as in others treated on conservative principles, and that exhaustion and gangrene were more common causes of death; that in cases treated on ordinary surgical conservative principles delirium tremens and tetanus were more common causes of a fatal result. Analysing the 17 examples of compound fracture of the thigh—9 underwent primary amputation; 6 died, and 3 recovered. 1 underwent secondary amputation; fatal. 7 were treated on conservative principles; 4 died, and 3 recovered. 10 were thus treated by amputation, and 7 of these died, or 70 per cent. 7 were left to nature's efforts for repair, and of these, 4 died, or 57 per cent. After giving an outline of the fatal cases, the author goes on to remark, first, on the rarity of compound fracture of the thigh, the accident bearing

the proportion only of 5·6 per cent. to the other cases involving the larger bones of the extremities. This fact is well borne out by the experience of all surgeons. The excessive mortality of these cases is the second point to which allusion is made, 64 per cent. of the whole number of cases proving fatal. In nearly 60 per cent. amputation was had recourse to, and 70 per cent. of these cases subsequently sank. The extreme severity of the majority of these cases rendered primary amputation absolutely essential. More than half the examples died, or 57 per cent., in which attempts had been made to save the limb; and the cases in which recovery had taken place were in young and healthy subjects. The author then passes in review the opinions of some military surgeons on the subject, and points out how Dupuytren, Hennen, Larrey, Guthrie, and others agree that in compound fracture of the thigh from gun-shot wounds, "in rejecting amputation, we lose more lives than we save limbs;" and also "that in the exceptional cases, which result in consolidation, the condition of the limb is not encouraging." He quotes Macleod's Crimean experience as indicating the same opinion, this surgeon advising amputation in all such cases when taking place in the middle and lower third of the thigh, and hesitating only in a like recommendation in cases of fracture of the upper third, on account of the extreme mortality of such amputations. Malgaigne's and Bauden's experience is next quoted to prove the poor success of conservative treatment in these injuries, the latter surgeon saving only 2 out of 25 cases, and these two retained useless and deformed limbs. The author then goes on to say that the experience of civil surgeons is not unlike that of their military brethren, although it is much more limited; and he expresses an opinion, which he believes to be generally entertained, that a satisfactory result can rarely be obtained by conservative treatment, except in the most favorable cases,—that is, when the subjects are young and the fracture uncomplicated; when the soft parts are not materially damaged nor the bone comminuted. When the bone is comminuted and the soft parts seriously involved (such a condition being generally produced by local mechanical violence), he believes that a satisfactory termination of the case must be regarded with doubt. If the patient should be old or unhealthy, amputation should be at once performed; and if there should be a doubt as to which line of treatment to adopt, the safest is to decide on amputation. But if the subject should be a young and healthy one, and not subjected to injurious hygienic influences, the author believes that a satisfactory termination might be obtained by removing at once the broken and disconnected fragments of bone (enlarging the wound if necessary), and by maintaining the absolute repose which is so essential. He believes it to be bad practice to leave the broken fragments in position, with the hope of union; for by doing so we leave a constant source of irritation, which must retard the local process of repair, as well as seriously weaken the powers of the patient, a subsequent operation being almost necessarily required to remove what will become necrosed bone.

Analysis of the 193 *cases of compound fracture of the leg.*

These numbers include fractures of the tibia, and tibia and fibula combined, the latter being the most numerous. Compound fracture of the fibula is comparatively a rare accident. 129 were treated on conservative principles, 35 of which died, or 27·13 per cent. 32 underwent primary amputation of the leg, 19 of which died, or 59·37 per cent. 11 underwent primary amputation of the thigh, 6 of which died, or 55·55 per cent. 15 underwent secondary amputation of the leg, 10 of which died, or 66·66 per cent. 6 underwent secondary amputation of the thigh, 4 of which died, or 66·66 per cent. 74 of the whole number died, or 38·34 per cent.,—27·13 per cent. of those dying which were treated on conservative principles, and 60·9 per cent. of those treated by operative interference. In 22 per cent. primary amputation was performed; in 10 secondary; and in 67 per cent. conservative treatment was adopted. A table is given, showing the causes of death in the fatal examples, from which it appears that of the fatal cases operated on, about one third died from pyæmia, and nearly two thirds from exhaustion or gangrene. That of the cases treated on conservative principles, not one sixth die from pyæmia, and something less than half from exhaustion and gangrene,—pyæmia being evidently a more common cause of death after operation. The author then goes on to observe, that no comparison can be well drawn between the two classes of cases in which conservative treatment and operative interference had been applied. In compound fracture of the leg, he believes that the injury should be very extensive to warrant such a practice as amputation: for most cases, whether treated by primary or secondary amputation, prove fatal to about 60 per cent.; and when attempts to save the limb are carried out, by care and close attention good results may be anticipated. Let a free exit be made and kept up for the evacuation of all pus; let loose pieces of bone be removed as early as possible; and let the limb be preserved in absolute repose by any splints which will secure such an end. Let the tendo-Achillis be divided if the slightest difficulty is experienced in maintaining rest, and good support and nourishment freely given. Under such treatment, apparently hopeless cases often turn out well, and reward the surgeon's attention by a successful result. The author dwells at some little length upon the necessity of making free incisions whenever pus was present; this being a practice which he has never seen followed by any other than good results.

Analysis of the 35 *cases of compound fracture of the arm.*

14 were treated on conservative principles, and all recovered; 4 were treated by primary amputation at the shoulder-joint, 2 of which died from internal complications; 13 were treated by primary amputation of the arm, and 2 died; 4 were treated by secondary amputation, and recovered; 31 of the whole number recovered, and 4 died, or 11·4 per cent.

Analysis of the 57 cases of compound fracture of the bones of the forearm.

27 were treated on conservative principles, and all recovered. 22 were treated by primary amputation of forearm; 2 died, or 9 per cent. 5 were treated by secondary amputation—4 of forearm, 1 died; 1 of arm, fatal. 3 died from internal complications. The author then draws attention to the fact of the favorable termination of these last two classes of cases, which the experience of all surgeons correctly indicate. He states that such an operation as amputation should be resorted to only in the severest examples, and that in more favorable cases a good recovery might with some confidence be anticipated. He draws attention to the fact that so large a proportion as about 50 per cent. of the cases of compound fracture of the forearm admitted into Guy's Hospital were subjected to amputation, and explains it by proving that the majority of the cases were caused by machinery, which was too often followed by a total destruction of the part.

(c) CONCERNING INJURIES AND DISEASES OF VESSELS.

ART. 81.—*A proposition for the treatment of Aneurismal Varix.* By FURNEAUX JORDAN, Assistant-Surgeon to the Queen's Hospital, Birmingham.

(*Med.-Chir. Rev.*, Jan., 1861.)

It is common to do nothing in these cases unless the symptoms are very severe, when a ligature is applied above and below the wound in the artery. It appears to Mr. Jordan that, in a large number of cases, especially in the extremities, very considerable, if not complete, relief might be afforded by *obliteration* of the vein, above and below its communication with the artery, by means of a needle and twisted suture, or some other method, as in an ordinary (and widely different) varicose vein; perhaps in some cases a needle might also be passed with advantage under the contiguous artery for a short time, as in the acupressure method of Professor Simpson. If the practicability of the principle be granted, the method of applying it admits of great variety to meet the requirements of individual cases.

Mr. Jordan has not yet had an opportunity of practically testing the utility of this suggestion.

ART. 82.—*On the Arrest of Venous Hæmorrhage.* By Professor LANGENBECK.

(*Archiv für Klin. Chir.*, 1860; and *Med.-Chir. Review*, Jan., 1861.)

In the course of an interesting paper on the Surgical Pathology of Veins, illustrated by numerous cases, M. Langenbeck observes that styptics are not suitable for the arrest of venous hæmorrhage. The best of these, the liquor ferri sesquichlorati, is dangerous, owing to the extensive thrombus formations and subsequent irritating effects it

gives rise to. In all cases, when obstinate venous [illegible] from several small veins, he gives decided [illegible] cautery, as most certainly guarding against [illegible] thrombi and pyæmia. When the bleeding [illegible] vessel, compression, ligature of the vein [illegible] ing artery, should be resorted to. [illegible] extremities, *compression* of the [illegible] will usually suffice; and in [illegible] apply the finger to the central [illegible] then to the peripheric end to [illegible] large wound of the jugular, the [illegible] the best means of proceeding [illegible] wound by strips of plaster which [illegible] side of the neck, where they would [illegible] applied as to exert the most [illegible] without impeding the circulation [illegible] extremities, bandages may also be [illegible] the toes or fingers. When the [illegible] wound, the author places [illegible] wound with charpie, and then [illegible]

Ligature of the Vein.—In general [illegible] wounded vein of the extremities [illegible] and below the wound may be [illegible] enters just above the centre of [illegible] the removal of large tumours [illegible] subcutaneous veins, which [illegible] may be required; and [illegible] ligature, and between the [illegible] the completion of the [illegible] recommended [illegible] gains entrance by [illegible] ternal jugular, the [illegible] prior to operation [illegible] circumstances, the [illegible] as possible, especially [illegible] and pyæmia is increased. The internal coat of a large vein is not divided by the ligature as in the case of an artery; and the outer walls approximated by the ligature may unite before the separation of the latter—the vessel remaining pervious, though somewhat narrowed up to the very seat of the ligature. When inflammation follows a wound or a ligature, more or less extensive thrombosis may succeed, which may lead to detachment of coagula or pyæmia. When this is not the case the vein gradually becomes pervious again; and so great is the regenerative capacity of veins, that, even when large portions have been removed, these may be reproduced, affecting a junction between the separated ends of the still pervious vessel.

Ligature of the Artery.—It is obvious, *à priori*, that compression or ligature of the corresponding arterial trunk, by preventing the access of blood, must arrest hæmorrhage from a large vein; but it does not appear that any one has yet practised the ligature for such a purpose. One reason of this seems to be derived from the fact that when com-

pression of an arterial trunk, as the carotid, subclavian, or femoral has been made, through the soft parts, at some point between the heart, and the bleeding wound, the bleeding from the jugular, axillary, or femoral vein has not immediately ceased. This is partly because the peripheric veins still continue to pour their blood into the injured vein, and partly because an effectual compression of the carotid or femoral artery is not possible without accompanying compression of the jugular or femoral vein. Compression of the arterial trunk, therefore, not having been attended with the same immediate effect as in arterial hæmorrhage, it has been believed that no good result was to be expected from the ligature. Again, it has continued, until the most recent times, a cherished opinion among most surgeons, that the simultaneous tying of a large venous and arterial trunk must give rise to gangrene—a fear which experience has shown to be unjustifiable. In fact, when both artery and vein are tied, not only does no gangrene follow, but there is less disturbance of the capillary circulation than when only one of these vessels is submitted to the ligature. In two cases related by the author in which the carotid and common jugular were both tied, no disturbance whatever of the cerebral circulation took place, and neither patient exhibited any symptoms which have been met with when ligature of the carotid alone has been practised. During the establishment of the collateral circulation an equilibrium between the arteries and veins has been maintained. In this ligature of the artery, then, we have a safe means of treating venous hæmorrhages which may otherwise prove fatal, and the author relates a case in which he made application of it. During the removal of a large sarcomatous tumour from the thigh, the much-enlarged and brittle femoral vein was opened. The hæmorrhage was excessive, repeatedly resisting every attempt to arrest it, and the patient was well nigh lost. The femoral artery, already exposed during the operation, was tied, and the bleeding at once ceased. The ligatures which had been passed around the vien were removed, and the wound dressed. The patient did well. This, as far as the author is aware, is the only case in which an arterial trunk has been intentionally tied for the arrest of a dangerous venous hæmorrhage. He refers, however, to cases quoted by Dr. Crisp, in which bleeding from wounds of the vein made during the operation for popliteal aneurism ceased after the application of the ligature to the artery. The author recommends that as soon as compression proves without avail in hæmorrhage from large venous trunks that the artery should be at once tied—the simultaneous tying of the injured vein being unnecessary and unadvisable from the danger of thrombosis it gives rise to.

(D) CONCERNING OPERATIONS.

ART. 83.—*On "Drainage par Adossement."*
By M. CHASSAIGNAC, Surgeon to the Hôpital Lariboisière, Paris.

(*Jour. of Pract. Med. and Surgery*, March, 1861.)

Two cases have been recently under treatment in M. Chassaignac's ward, which show the value of this mode of treatment in a striking point of view.

One of these cases is that of a lad, æt. 16, who was admitted into the hospital on the 11th of September, for suppuration of the epiphysis of the radius.

This individual complained at the period mentioned, of excruciating pain in the inner part of the forearm, and his worn countenance bore evidence of the severity of his sufferings. This was not, as might at first have been supposed, a rheumatic affection, but osteitis of the epiphysis of the radius, with suppuration of the bone, a disease not uncommon in youth. The hand was hanging and partial luxation imminent. Leeches had twice been unavailingly applied to the seat of pain, suppuration had set in, and unmistakeable fluctuation was present. The usual and proper practice would here have been to open the abscess, remove its contents, and cover the part with poultices. In this instance, however, a simple incision would have proved insufficient, and the puriform secretion, uninterruptedly supplied by the diseased bone, would inevitably have glided into the tendinous sheaths, and perhaps have induced fatal consequences. To obviate these results, M. Chassaignac resorted to his method of drainage, from which he obtains most favorable effects in all morbid conditions of the bones, attended with suppuration.

A curved trochar, destined to act as a guide to the elastic tube, was inserted into the forearm, sufficiently deep to come into contact with the diseased bone; the instrument was then turned, and caused to emerge at a proper distance from the orifice, at which it had first been introduced. The inventor, M. Chassaignac, denominates this operation, in his 'Treatise on Suppuration,' "*drainage par adossement.*" The trochar being removed, a fenestrated canula was introduced into the metallic tube, which was withdrawn; both ends of the drainage pipe were then tied so as to form a sort of collecting drain, which, receiving the morbid secretion through its lateral apertures, allows it incessantly to flow outwards, and thus effects the desiccation of the abscess, and promotes the cicatrization of the bone.

In his first applications of this variety of surgical draining, M. Chassaignac was under the impression that his procedure merely prevented the stagnation of puriform matter; but as his experience on the subject increased, he found that instances of cure of necrosed or carious bone became so numerous that no further doubt now remains in his mind as to the *curative* action of this mode of treatment of caries or necrosis.

The patient in the other case was a young man affected with caries of the mastoid. M. Chassaignac, having carefully probed the parts to

discover an inlet for the curved trochar, inserted this instrument through the auditory duct into the mastoidian cells; the blade was brought out at the apex of the apophysis, and in this artificial passage he placed a drainage tube, through which the morbid secretion continuously escapes. Since this system of desiccation has been adopted, the patient has ceased to be troubled, as before, with frequent vomiting, and seems in a fair way of recovery.

With regard to the lad afflicted with suppurating inflammation of the radius, his state is equally satisfactory; pain has subsided, the hand has recovered its proper situation, the secretion is less abundant, and he will soon be permitted to leave the hospital.

ART. 84.—*On Plaster of Paris Bandages for dressing Stumps after Amputation.* By Dr. TRANENS.

(*Edin. Med. Journ.*, Nov., 1860.)

During the last two years many successful experiments have been made by Dr. Tranens, at the Infirmary of Uddevalla, in Sweden, upon the application of fixed dressings of gypsum to amputated limbs. The dressings are applied as follows:

"When the hæmorrhage has been stayed, the threads of the ligatures are not to be confined as usual, but kept together, and led in the shortest way to the margin of the wound. Instead of plaster dressings, strips of cotton, impregnated with dry plaster of Paris, or gypsum, and dipped in water just before use, are then applied; that is, the limb may be, as usual, enveloped in a compressing roller twelve or fifteen feet long, impregnated with gypsum on both sides. The tourniquet may either be removed, or, if that is not advisable, applied to the main artery, at such a distance from the wound that compression is possible. Six or eight straps, impregnated with gypsum, two or three inches broad and a foot long, are then laid transversely over the wound, crossing from one side to the other, so as to keep the edges close together, only taking care that the ligatures be first laid hanging loose over the margin under those bands. Finally, another roller, as long as the first, and impregnated in the same way, may be laid over all these, to retain the whole dressing in its place. When this dressing has dried, it is not to be disturbed for three or four days; but, when it is wet through over the sore with the discharge from the wound, an opening is to be made with a knife and pincers or scissors, at points corresponding to the seats of the ligatures, whereby the matter from the wound may be removed, and its surface, if necessary, cleansed, and the ligatures, as usual, attended to. These little openings, of an inch in diameter, can easily be closed by any common plaster or ointment, and allow of the wound being inspected daily, especially as they may be enlarged by cutting away more of the dressing during the three or four following weeks. After this time the atrophy of the limb enables the surgeon to pull off the whole dressing like a cap, when the wound is generally healed.

"The su[illegible] of this method of dressing consists in the following parti[illegible]

"1st. The dressing is agglutinative in itself and in regard to the surface of the skin.

"2d. It is not liable to be affected or injured by any discharge from the wound.

"3d. It permits of being opened with the greatest facility.

"4th. It is not at all injurious to the surface of the wound.

"To obtain the necessary gypsum sufficiently calcined, there should be procured a large piece of the gypsum commonly known in commerce, which is almost as hard as white marble, gray in colour and crystalline in texture; this should be broken into pieces of not above one cubic inch, spread in a single layer on an iron plate in an oven, and exposed to a common oven heat, at least an hour and a half, till it becomes white and easily breaks down into powder; in this condition it should be preserved in a jar, with a ground glass stopper, and pulverized when required.

"Rub the gypsum prepared as above, upon both sides of two twelve feet long roll bandages (which are afterwards loosely rolled together), and six to eight linen bandages, one and a half foot long and two inches broad. These, with a basin of water, are to be placed as near the patient as is deemed convenient; and each bandage and stripe, just before the application, must be thoroughly wetted. One of the roll bandages is first applied, in descending turns, each turn at least half covering the other, as a 'contentiv-binda,' in at least two layers. The wound being a clean one, the edges, drawn together as close as possible, are fastened with 'suturæ nodosæ,' according to circumstances, but the extremities of the ligatures are not fastened as commonly, upwards on the stump, *but are laid along the line of the wound* —the reason for this will be afterwards explained. The provided stripes are now, in succession, taken at both ends, immersed in water, and their middle applied across the wound, after which the ends are firmly pressed upwards on the stump, so that the wound is kept together by a double layer. It is preferable so to apply them, that one or two small openings are left between the edges of the stripes, for examining the state of the wound. Outside these stripes is afterwards applied a gypsum wet roll bandage, to fix the stripes, but according to the common rules of the art. Within twenty or thirty minutes the bandage is hardened, and the patient can, without inconvenience, be placed in bed. In cases of amputation of fingers or toes, the application of gypsum bandages being simpler, requires no particular description. The only really dangerous symptom which is now to be feared, is after-bleeding, which, if venous, will soon stop from the even pressure, partly of the 'contentiv-bandage,' and partly from the bandage surrounding the stump; but if the bleeding is arterial, and cannot be stopped by the tourniquet, ice in a bladder should be tried, and 'astringentia and sulphuric acid,' failing which, the gypsum bandages must be removed.

"An inconvenience may arise from continued severe pain, which the patient sometimes suffers both after gypsum as well as starch bandages. In two such cases have we been prevailed upon to remove the bandages, but without being able to discover any reasonable cause for unusual pain. In two other cases, the bandages have been

allowed to remain untouched, notwithstanding many complaints, and, on the final removal, no inconvenience followed. I must add that, in these cases, no pressure took place from too tight a bandage, as the limb, from every side, being equally pressed, had, as is always the case, diminished below the normal size. The formation of an abscess is possible, but the matter should easily escape by the fine canal formed by the ligatures. In one case, we put a hank through the abscess, and, in two weeks, saw it filled up with 'granulation.'

"Although I have not seen erysipelas, mortification, or other complications take place under this system, yet, should they occur, they could be treated in the usual way, retaining, in part, the gypsum bandage. On the third day it is usual to loosen the ligatures, as also to discharge, any matter, &c., that may have gathered; but by this system it is only necessary to cut one or two holes in the bandage, where it is moist, opposite the margin of the wound, which can be easily done by raising the bandage by pincers. If the openings have been made at the right place, the ligatures will appear in the line of the amputation wound, and can easily be drawn out. By gentle pressure the matter can be removed, as well as cleansing by injection, through these openings, which, if desirable, can be afterwards covered with a small compress anointed with some simple salve; during the following days it may be necessary to make a couple of openings besides, for the removal of the sutures; but this should not be hurried, for the longer the bandages can remain unmoved, the surer is it that the healing 'per primam intentionem' is advanced.

"To ascertain if all is going on well, in three weeks that entire part of the bandage that covers the face of the stump can be cut away, the circular portion of the bandage that remains will prove a protection and support to the newly-formed edges of the healing wound. Generally, in most cases, the bandages can remain unmoved from three to five weeks, when the wound will be found well healed."

ART. 85.—*Observations on the growth of Long Bones and of Stumps.* By Dr. HUMPHRY, Surgeon to Addenbrooke's Hospital, Cambridge.

(*Proceed. of Royal Med. and Chir. Society*, April 9, 1861.)

The *first* part of this paper gives the results of some experiments with madder upon the bones of pigs with reference to the mode of growth of the bones in length. These are confirmatory of the observations by Hales, Duhamel, Hunter, and others, that the elongation is effected by addition at the ends of the shafts, the addition being effected by growth and ossification of the epiphysial strata of cartilage on the side next to the shaft. The experiments show also that the growth at the two ends of the shaft is unequal; that it is usually most rapid at the larger end of the bone; and that it is always most rapid at the end where the epiphysial cartilage remains latest—that is to say, the growth proceeds most rapidly at the end where it is longest continued. The proper relation of the soft parts to the bone during the periods of growth is maintained by the interstitial growth of the periosteum, and by the continual sliding or shifting of that mem-

brane upon the bone towards the end at which the growth is most rapid. This is attended with a certain traction upon the medullary and other vessels, and determines the direction of the canal for the medullary artery, which is always slanted towards that epiphysis which is last ossified to the shaft; in other words, towards that epiphysial line in which growth proceeds most quickly. The amount of growth in the respective epiphysial lines is very determined, and corresponds exactly on the two sides of the body, though that on the one side is not affected by the other; and it appears to regulate the amount of growth of the soft parts; for if it be either arrested or accelerated, the growth of the soft parts is affected in a similar manner.

In the *second* part of the paper the author shows the common impression, that a stump keeps pace with the rest of the body in its growth, to be erroneous. He does this by measurements taken from persons who had undergone amputation in childhood, and by experiments upon animals. The rate of growth varies. The stump rarely maintains its relation to the corresponding segment of the other limb; and it fails to do so, as might be expected, most markedly in those parts in which the growth of the bone takes place chiefly at the lower end. Thus, if amputation in the thigh be performed on a young child, one third from the lower end, the stump, when full growth has been attained, will not be more than a third as long as the other thigh; its relative length will have thus been altered from two thirds to one third—that is, it will not have grown more than half as fast as the other thigh. The information derived from the measurements of stumps is thus shown to be quite corroborative of the observations made in the first part of the paper, respecting the growth of the bones at their epiphysial lines. The instances in which the bone of a stump elongates so as to be troublesome and require a portion to be removed, are regarded by the author as quite exceptional, the phenomenon being probably due to some irritation, and being, therefore, of the same nature as the spicules and exostoses which are occasionally found upon stumps and on other parts of the skeleton.

SECT. II.—SPECIAL QUESTIONS IN SURGERY.

(A) CONCERNING THE HEAD AND NECK.

ART. 86.—*A new method of operation for Glaucoma.* By Mr. NUNNELEY, of Leeds.

(*Lancet*, Jan. 26, 1861.)

"The manner in which I have operated," says Mr. Nunneley, "is to puncture the sclerotic coat with the point of a sharp, thin knife—a small cataract, or very narrow, short bistoury answers very well—not less than one eighth of an inch behind its junction with the cornea,

and carry it on to about the same extent through the cornea, making altogether an incision about one third of an inch long. Care must be taken to pass the knife sufficiently deep to completely divide these textures, and yet not so deep as to touch the lens, which I once did, owing to the patient starting at the moment the incision was made. Care also must be taken not to make the incision too long. A large incision in the sclerotic, besides unnecessarily wounding important tissues, is useless, and if carried too far towards the centre of the cornea, though allowing this afterwards to yield more, is bad, for it may allow the lens to be displaced into the aqueous chamber; and if the iris should adhere to the whole extent of the corneal section, as it is likely to do, particularly if a portion of its whole breadth has been removed, not only will there be dragging of it, but the section becomes opaque, and hence the field of vision is lessened. In making the section, if the point of the knife has been well kept in, the outer margin of the iris will be divided. Sometimes the iris bulges through the section. I have tried the effect of simply leaving the prolapsed iris in the wound, of cutting it off, and also of pulling out a larger portion, and cutting off a strip through the entire width. In this latter plan the operation more nearly assimilates with Von Graefe's iridectomy, only that the section through the unyielding tissues is made directly across their junction, instead of into or parallel with it, whereby a greater expansion in it is allowed, and not nearly so much of the iris is removed. If none of the iris be cut off or tied, the pupil usually recovers its circular form; if some be excised, it remains oval and attached to the corneal cicatrix in proportion to the size of the piece removed, but in a much less degree than would *à priori* be anticipated. The degree of deformity is very slight indeed.

"The spot where the incision is made, so far as the relief obtained is concerned, can make very little difference; but I have usually selected the centre of the lower corneal curvature as being likely to produce less noticeable alteration in the appearance of the eye; and, when both eyes are operated upon, as interfering less with accuracy of vision than any other. On the whole I think, in severe cases, the removal of some small section of the entire width of the iris advantageous, as affording a longer continuous drain of the aqueous humour than simple incision of the scleroto-corneal junction does. I have in one case only seen much bleeding into the aqueous chamber, and what blood is there effused is soon absorbed. In one case the iris gave out more blood than usual—perhaps twenty drops; but as this at once escaped by the section, it was of no moment, and was easily arrested by cold, wet cloths. In two of the cases in which I performed iridectomy, the quantity of blood effused into the eye was sufficient to fill the aqueous chamber; and in one of them it was a long time before being entirely absorbed. Usually, however, all trace of it is lost within a week, or, at most, ten days. In two or three of the cases severe pain in the side of the head ensued, which an opiate relieved; and in one instance, as I have before said, considerable inflammation; but in all other cases very little inconvenience followed."

ART. 87.—*On the effects of evacuating the Aqueous Humour in Inflammation of the Eyes, and in some diseases of the Cornea.* By Mr. JAMES WARDROP.

(*Medico-Chirurgical Transactions* for 1813: *Dublin Medical Press*, Sept. 19, 1860.)

The following portion of the original paper of Mr. Wardrop, on "tension" of the eyeball from inflammation, is quoted by our Dublin contemporary, to show that the "intra-ocular pressure" of the iridectomists "is nothing but a new name to disguise old practice." We copy it, not with this view, but because we think that this paper has been overlooked by those who are now so full of the subject of glaucoma and iridectomy. At any rate, we are sure that the remarks following possess more than one point of interest under present circumstances.

"In January, 1807," says Mr. Wardrop, "some cases of ophthalmia were published in the 'Edinburgh Medical and Surgical Journal,' in which the evacuation of the aqueous humour was attended with beneficial effects—but at that time, the practice was to be considered only in its infancy, the number of cases in which it had been tried were very limited, and I was unable to point out, with any degree of precision, the particular species of ophthalmia, and the peculiar symptoms of the disease which could be relieved by this mode of treatment. I had, however, sufficient experience to be convinced, that the operation could be performed, in almost every case, without aggravating, if it did not arrest the progress of the inflammatory symptoms; and I therefore embraced that channel of laying my observations before the public, that both the application and the utility of the practice might be established by the additional experience of others. The subsequent successful result of this mode of treatment in a series of cases of ophthalmia, and its utility in some affections of the cornea, have induced me to bring the subject before the public in this memoir; being now enabled to point out, with some confidence, the particular species of the disease, and those symptoms, which the evacuation of the aqueous humour is best calculated to remove, and, at the same time, to recommend it as a mode of practice, from which very important advantages may be derived in some violent and alarming cases.

"1. *General observations on the evacuation of the aqueous humour.*—I formerly took notice, that I was first led to evacuate the aqueous humour in some of the diseases of the eye from a very curious phenomenon observed by Dr. Barclay in that organ after death. He remarked, that if the eye of an animal be moderately squeezed in the hand, the whole cornea will instantly become cloudy, and that when the pressure is increased, the obscurity also is increased. If it be still more squeezed, the cornea becomes of such an opaque, milky colour, that the iris cannot be distinguished through it. He likewise observed the same appearances to be produced from filling the veins with water or quicksilver; but that, whenever the pressure or over-distending cause was removed, the cornea completely regained

its transparency, and appeared as if no such experiment had been made.

"From this curious phenomenon in the dead eye, it was probable that, in the living one, the transparency of the cornea might vary according to the degree of its distension; and that, in some varieties of opacities of the cornea, the obscurity might arise from an increase in the quantity of the contents of the eyeball. Besides, therefore, bloodletting, purging, and the other means usually recommended in the treatment of the inflammation which generally accompanies obscurities of the cornea during the early periods of the disease, it occurred to me, that a more complete and sudden diminution in the contents of the eyeball might be produced by evacuating the aqueous humour.

"A favorable case for the trial of this practice soon occurred, where there was a very considerable degree of milkiness and opacity of the cornea, and in which also the eyeball appeared distended, prominent, and accompanied with acute inflammatory symptoms. I discharged the aqueous humour by a small incision through the cornea, and had the satisfaction to find that the operation produced not only an alteration in the degree of transparency of the cornea, but also that the pain, and all the inflammatory symptoms, were removed.

"From the success of this case, I was not only convinced of the good effects which this operation might have in removing some opacities in the cornea, but, from the unlooked-for alleviation of the inflammatory symptoms, I was afterwards led to have recourse to this mode of treatment in violent cases of inflammation of the eyeball, in which the cornea had little or no share in the disease.

"The evacuation of the aqueous humour in ophthalmia may appear to some, on first considering the subject, a violent and even formidable mode of practice, from the means necessary to accomplish it, consisting in a wound being made in an organ already highly inflamed, and become extremely irritable and painful. But the pain of making a puncture through the cornea is by no means acute, when the cornea itself is not inflamed, or otherwise diseased; and in the operation for the extraction of the cataract, where the cornea is quite sound, I have heard the patients compare the pain in making the incision through it, to a hair drawn across the eye. Though the cornea, in the natural state, has but little sensibility, yet it should be observed that, if diseased, it becomes the seat of very considerable pain; and when it is inflamed, or when ulceration has taken place on any part of it, the pain of an incision becomes acute; besides, from the irritation which the exposure to light produces in an inflamed eye, and more or less pressure being always necessary to hold the eyeball steady, the evacuation of the aqueous humour cannot be accomplished, in many cases, without giving a considerable degree of uneasiness. The pain, however, produced by the operation, particularly if it be done with care and attention, soon subsides, and the good effects which quickly succeed sufficiently compensate for any uneasiness it may have occasioned. Wounds, too, of the cornea, heal with uncommon rapidity; and I have not, in a single instance where the operation has been performed, been able to detect the smallest vestige of an in-

cision: nor has it ever occurred, so far as I know, that any visible cicatrix remained, even in those cases in which the operation had been performed when the cornea was in a previous state of ulceration.

"In those cases where the practice of evacuating the aqueous humour is judiciously had recourse to, although the operation may create some temporary irritation, yet its good effects will become immediately perceptible, and in most cases will be permanent. The more obvious of these are a more or less considerable improvement in vision, particularly in those cases where there is a cloudiness in the anterior chamber, a complete cessation of the sense of fulness of the eyeball, and pain in the head; and, in some cases, a very remarkable change in the size of the inflamed vessels. The great and immediate relief which is obtained by the evacuation of the aqueous humour in ophthalmia, most probably arises chiefly from the sudden removal of *tension*. The pain accompanying inflammation in other organs of the body is, in general, in proportion to the degree of tension and resistance of the adjacent parts. It is well known how much relief is afforded in deep-seated inflammations, such as that of the periosteum, and in some varieties of whitlow, by making a free incision through the skin and external parts. The same thing is also illustrated in the good effects produced by dividing the gums during dentition, and in the relief generally afforded by the evacuation of the matter of an abscess. In the eye itself, this observation is very strikingly applicable; for it often happens, in violent cases of ophthalmia, that suppuration takes place within the globe, and the purulent matter and humours are suddenly discharged by the coats of the eye bursting. Whenever this takes place, it is invariably remarked, that all the inflammatory symptoms are suddenly alleviated. There is a case mentioned by Prochaska, where the aqueous humour was so acrid as to tarnish the cataract knife; yet this change does not appear ever to take place in ophthalmia. I have also heard of a case, where the point of a knife, which was broken off in the anterior chamber, was rapidly oxydated and absorbed.

"In those cases where the discharge of the aqueous humour has been found beneficial, it is not even necessary to suppose that its natural quantity is increased. The inflammation will add both to the number and to the size of the blood-vessels within the eyeball, and consequently will increase the quantity of its contents; therefore, if the pain and any of the other symptoms arise, or are aggravated by that unnatural distension, the same good effects will result, whether the contents of the eyeball be lessened by a diminution in the number and size of the blood-vessels, or by the discharge of the aqueous humour. In many cases of ophthalmia, it is very probable that either of these means would have the effect of abating the violence of the inflammatory symptoms; that in some cases the one shall be useful, whilst the other fails; and that, in very violent cases, both means may be employed at the same time with much advantage. It is not, therefore, to be understood that the discharge of the aqueous humour is here to be recommended as the sole remedy in any case of ophthalmia, but is only to be considered as a powerful auxiliary in some cases,

and in others as a sure, and perhaps the only means of preventing the total destruction of the organ.

"When the object is to diminish suddenly the contents of the eyeball, the evacuation of the aqueous humour must fulfil this intention in a more complete manner than we can conceive probable to be effected by any means we have of abstracting blood from its vessels; for as the ophthalmic artery comes from the encephalon, little blood can be taken directly from any of its branches, and it would require a great quantity of blood to be drawn from the temples, or neighbouring arteries, to make any remarkable change in the quantity of the contents of the eyeball; or, at least, a change equal to that which would be produced by the discharge of the aqueous humour. From the advantages also which have been universally found to arise from a sudden depletion of blood, in comparison with what can be derived from a slow detraction, considerable benefit might be expected from the practice now proposed; for as its effects must be immediate, a sudden change will be produced in the state of the organ, and a change favorable to the abatement of the inflammatory symptoms.

"2. *Of those cases of ophthalmia which are relieved by the evacuation of the aqueous humour.*—From the number and variety in the phenomena which accompany inflammation of the eyes, from the combinations and various modifications of those phenomena, and from the fruitless attempts which have been made to describe the different species of the disease, it becomes difficult to point out with precision, in this place, those particular forms of it, in which the propriety of discharging the aqueous humour is indicated. It would be foreign to the object of the present memoir to enter into any elaborate description of the different species of inflammation of the eyes, my intention being to attempt this in a future publication. It will now be sufficient to remark, in general, that those parts composing the organ of vision, in which there is a difference in the natural structure, present different phenomena when they become inflamed. Inflammation of the conjunctiva or mucous membrane of the eye is accompanied with that puriform discharge so characteristic of all inflamed mucous surfaces, as that of the urethra, vagina, bronchiæ, nose, and every other surface of a similar nature in the body. Inflammation of the different structures which compose the cornea, inflammation of the iris, of the choroid coat, of the sclerotic coat, and of its investing cellular membrane, all present a variety of distinct and characteristic symptoms. Besides this difference, arising from a difference in the natural structure of the parts affected, there are distinct species of inflammation which derive their particular characters from being the effect of specific diseases. Of these we have examples in scrofula, cancer, lues venerea, rheumatism, and gout; all of which occasionally attack the eyes, in common with most other organs of the body. In all these species of ophthalmia particular examples do occur, in which the aqueous humour may be discharged with advantage; for though the inflammation almost always originates, and is most severe, in one of the textures of the organ, yet the whole eye is in many cases more or less affected, and th[illegible]ns arise which the evacuation of the aqueous humour is wel[illegible] remove.

"I shall, therefore, after describing the mode of performing the operation, enumerate those forms of ophthalmia in which the practice has been found beneficial, and illustrate these observations with the history of some cases. Before, however, entering into this detail, I may observe, in general, that there are no states of the eye in which this treatment is so applicable as in those cases where the coats threaten to give way; for, as was before mentioned, many authors, who have described ophthalmia, have particularly noticed, that when the eye bursts, whether from internal suppuration, or from ulceration of the cornea, a remarkable alleviation takes place in the pain, and an abatement in all the other inflammatory symptoms. In the puriform, or, as it is often called, the Egyptian ophthalmia, this is the usual termination of the severe cases of the disease, and is that change which, by producing a collapse of the globe of the eye, renders the organ irrecoverable. But besides these, there are cases of a very different description, in which the evacuation of the aqueous humour is of much advantage, and where the disease, though not of such a dangerous nature, is yet found unmanageable by the means usually employed. The particular cases now alluded to, are those in which the cornea and anterior chamber acquire a peculiar kind of dimness, the transparency being restored, and the accompanying inflammatory symptoms alleviated, by the discharge of the aqueous humour. Besides the peculiar muddiness in the anterior chamber, these cases are characterised by an uneasy feeling of distension in some part of the head, chiefly the forehead; and this symptom generally yields to the evacuation of the aqueous humour.

"3. *Of the mode of discharging the aqueous humour.*—The aqueous humour may be discharged by a very simple operation, nothing more being necessary than to make an opening through the cornea of a sufficient size to allow that fluid to escape, and in such a situation that any subsequent cicatrix may not impair vision. The opening may be made with any of the knives commonly used for extracting the cataract. It is sufficient that the point of the knife be introduced so that it makes a puncture into the anterior chamber; and this should be done near the junction of the cornea and sclerotic coat, at any part of the circumference. When the knife has penetrated the anterior chamber, it may then be withdrawn a little, and the blade turned on its axis, so that the aqueous humour will readily escape; and it is better not to remove the instrument altogether, till the fluid is observed to be discharged; for if the incision be not sufficiently large, and the knife taken away before the aqueous humour flows out, the elasticity of the cornea closes the wound, and either hinders the evacuation from being so sudden, and consequently so efficacious, or the closure of the wound entirely prevents its escape. The operation, therefore, which is necessary to discharge the aqueous humour, is merely the first step of the section of the cornea, made in extracting the cataract, or what has been called *the punctuation of the cornea.*

"The chief difficulty in performing the operation arises from the pain occasioned by the necessary pressure on the eyeball, whilst keeping open the eyelids; but until a sufficient portion of the cornea is brought into view, and the movements of the eyeball completely

under the management of the operator, the introduction of the knife should not be attempted. The upper eyelid should be kept open either by the fingers of an assistant, or by Pellier's speculum. If the latter be employed, it will be found useful to have the silver wire covered with a piece of crape, which will prevent it slipping from any moisture of the skin, an accident very common, and very troublesome. The operator, with the fore and middle fingers of one hand presses down the under eyelid, and applies their points over the tarsi, in such a manner, that they touch the eyeball, and can apply any degree of pressure upon it which may be necessary. After the assistant raises the upper eyelid, the patient should be directed to look downwards; and the assistant then employs a sufficient pressure to keep the eye in that position. The operator may then make the puncture; but as the patient is very apt to start when he first finds the instrument coming in contact with his eye, I have found it useful merely to touch the cornea repeatedly with the back of the knife till all risk of starting is over; and as soon as the back of the extremity of the instrument rests on the part where the puncture is to be made, the knife can be raised very steadily on its point, and then the point thrust into the anterior chamber. Though I have described the method by which the puncture of the cornea may be made with a common extracting knife, yet it is evident that the aqueous humour may be discharged equally well by other instruments, such as a couching-needle; and of late I have been in the habit of generally employing the instrument of Mr. Cheselden. The more we are in the habit of using any particular instrument, the more dexterity and ease do we acquire in its use."

Art. 88.—*A new operation for Iridectomy.* By Mr. Henry Greenway, of Plymouth.

(*Medical Times and Gazette*, Dec. 16, 1860.)

The novelty of this operation is in the employment of a *Guillotine*, in which a vacuum is made to perform the office of a forceps. Mr. Greenway also suggests the application of an analogous instrument in other operations, as excision of the tonsils.

The instrument somewhat resembles a syringe, but, instead of being furnished with an ordinary nozzle, a canula is screwed on to the end of the cylinder, or body, and there being no piston, the rod, which would otherwise be the piston-rod, is continuous with a blade which lies within the canula. This rod passes through an air-tight fitting at the upper part of the cylinder, and has a spring action. The canula is plano-convex transversely, its bore being one twelfth of an inch by one fifth; the plane surface presents near the extremity a circular aperture, about one eighth of an inch in diameter, for the admission of a portion of the iris; that small portion of the tube beyond this aperture is filled with lead, which serves, not only as a plug to completely obstruct the extremity, but as a point of resistance for the blade. On the convex surface is a small mark which indicates the position of the aperture [illegible] plane surface.

The blade is kept [illegible] with the floor or plane surface of

the canula by means of a spring, which is interposed between it and the roof or concavity of the canula. Communicating with the upper part of the cylinder is a metal tube, about an inch in length, on which is fixed an india-rubber tube, which is furnished with a mouthpiece at its free end. This may be termed the suction-tube. On the opposite side of the cylinder is fixed a ring to receive the finger of the operator.

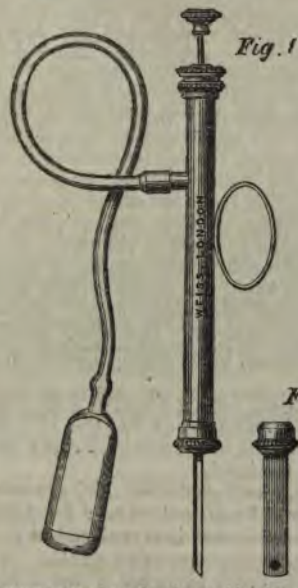


FIG. 1.—The instrument complete, showing a side view of the canula.

FIG 2.—A view of the plane surface of the canula, showing the circular aperture for the admission of iris.

It will be evident that if a person placed the mouthpiece between his lips, and caused suction, a current of air would pass in at the circular aperture of the canula, and, that if this aperture were placed in apposition with a thin structure, such as the iris, a small portion of it would be drawn into the canula in the form of a cup. If, now, the blade be pushed forwards by pressing the head of the rod, the inclosed structure, answering to the shape of the aperture, would be excised immediately the edge of the blade came in contact with the piece of lead which fills the extremity of the canula beyond the verge of the aperture.

The experiments made on the eyes of animals supplied from the slaughterhouse, have been most successful. Mr. Greenway found that he could, without fail, excise a perfect disc from the iris in its natural state, thereby leaving a corresponding aperture. In some

cases he produced an aperture so near the pupillary margin as to leave only one twentieth of an inch of iris, and that in an uninjured state, between the natural pupil and the artificial one; and he therefore presumes that in cases of closed pupil, for which the instrument is intended, the results will be equally satisfactory.

The mode of operating is to pass a lancet-shaped blade through the temporal edge of the cornea, very near its junction with the sclerotica, into the anterior chamber, the incision being made large enough to admit the canula—the division of one fifth of the circumference of the cornea would certainly suffice. The operator having placed the mouth-piece of the suction-tube between his lips, should then introduce the canula into the anterior chamber, its plane surface, of course, facing backwards, and, as soon as the aperture of the canula is over the portion of iris required to be excised, suction should be made, and if the operator is satisfied that the iris is sufficiently drawn in, pressure should be made on the head of the rod, to cause the edge of the blade to bear on the lead plug to insure complete excision of the iris. Before the canula is withdrawn from the eye, the blade should be allowed to recede, by ceasing to press on the rod.

The instrument should be held by placing it between the fore and middle fingers of one hand, the thumb resting on the head of the rod; or, between the thumb and middle finger, the fore-finger being then placed on the head of the rod. The other hand should rest on the patient's cheek, the canula being steadied between the thumb and fore-finger.

The position of the patient during the operation should be upright, the head slightly inclined forwards, so that the iris may have a tendency to gravitate against the instrument. Proper means, of course, would be used to steady the head.

After every operation, the canula should be removed from the cylinder, and thoroughly cleaned and dried; the knife, also, should be cleaned and slightly oiled before it is replaced in the canula.

It would be advisable, before operating on the living subject, to procure a bullock's eye, in order to judge of the amount of suction required.

Art. 89.—*Case of Encysted Abscess in the Vitreous Humour.* By Mr. J. G. Hildige.

(*Medical Times and Gazette*, May 4, 1861.)

Circumscribed abscess in the vitreous humour appears to be one of the rarest of the results of inflammation in the eyeball—so rare as to find no place in works on ophthalmic surgery.

Case.—On the 20th of March last I was asked by Dr. Nolan, of this city, to see John W—, aged 58, a retired artilleryman, residing in Gloucester-place, and who had been suffering from inflammation of the eyeball for several weeks. He was a sallow, unhealthy-looking man, but, according to his own account, had always enjoyed good health, and had never served out of Great Britain. The eyelids of the affected eye were very much inflamed and swollen, the folds of the integument being completely obliterated, the eye

itself was intensely chemosed and projecting from the orbit, the cornea was opaque in its whole extent, and the severe lancinating pains in orbit and temple had almost wholly banished sleep for nearly a fortnight. The right eye was sympathetically affected, and he was unable to open it, on account of the very great sensibility to light. He stated that about five weeks previously he had caught cold in his eye while out walking, for which he had been treated at the dispensary in the neighbourhood. On his way to the dispensary one very cold morning, his symptoms became much aggravated, and on the following day intense pain in the eyeball set in, which was speedily followed by a total loss of vision. The pain was continuous, but was subject to exacerbations, which became intense at night, lasting until four or five o'clock in the morning, when it slightly abated. As the patient had been salivated, leeched, blistered, &c., without effect, and as he was wasted to the last degree, further medical treatment was out of the question; I, consequently, had him removed to the North City Eye Infirmary, and on the following day I enucleated the eyeball. The following was the result of the examination of the eye, which was made by Drs. Cruise and Curran, the Anatomical Lecturers at the Carmichael School of Medicine:

The form of the globe was considerably changed, its antero-posterior measurement being much greater than in the normal condition; its transverse diameter was also slightly increased. The cornea was perfectly opaque, and its curve much greater than natural. On making a transverse section of the eyeball, a perfectly circumscribed abscess, about the size of a small pistol-bullet, inclosed in a membraneous sac, and containing laudable pus, was observed in the centre of the vitreous humour. It was perfectly free, posteriorly and laterally, but anteriorly it was connected by fibrous bands to the ciliary body. The portion of the vitreous humour immediately surrounding the abscess was opaque, but no pus globules were detected in it. The iris was attached to the cornea in its whole extent, the pupil was filled up with lymph, and the lens and its capsule were perfectly opaque. From the very great congestion of the choroid, I fully expected there would have been exudation found between it and the retina, and partial detachment, at all events of the latter, from the choroid, but neither one nor the other of these results was present. The increased sensibility and irritation of the right eye rapidly diminished after the operation, and the patient can now distinguish the surrounding objects with it.

On referrring to Professor Arlt's work on 'Diseases of the Eye,' I find the following remarks in the chapter on Exudations into the Vitreous Humour:—"Post-mortem examinations have proved beyond doubt, that results occur in the vitreous humour, which can only be considered as the products of inflammation. It is, however, very probable that these products are not generated in the vitreous humour itself by inflammation of its substance, or of its enveloping membrane, but are carried into it from the surrounding tissues. For, neither the vitreous body, nor the hyaloid membrane, is furnished with vessels or nerves, without which inflammation cannot take place, and such products are never met with in the vitreous body without inflammation of the choroid being present. The term 'Hyalitis' owes its existence, not to the observation of symptoms, which can only be referred to inflammation of the vitreous body, but to the attempt to create a train of phenomena for each tissue of the eye, which will convey the idea of inflammation of it, in order that no gap may be left in the systematic representation of the diseases of the eye. The only real foundation for the disease termed hyalitis, is to be found in the occurrence of inflammatory products in the vitreous humour, which, however, can and must be explained in a very

different manner. These products are the result of inflammation of the ciliary body or choroid, and are carried into the interior of the vitreous humour, in the same manner as the nutritious plasma in the normal condition."

Mr. Bowman, to whom I related the above case, believes with Professor Arlt, that pus found in the vitreous humour is, in a great measure, derived from the choroid and ciliary folds.

ART. 90.—*On a sequela of Infantile Purulent Ophthalmia, which is an unnoticed cause of Epiphora.* By Mr. J. VOSE SOLOMON.

(*British Med. Journal*, Jan. 26, 1861.)

Surgeons who have seen much of the ophthalmia of new-born infants in private practice, must have been sometimes perplexed at the report of the mother or nurse of the continuance or reappearance of the purulent secretion after the conjunctiva of the lids had recovered completely, or to a great extent, its tone. This occurrence has not been noticed by systematic writers; nor has the cause to which it is referable been remarked upon by recent contributors to the pathology of epiphora.

Mr. Solomon is of opinion that the source of the purulent secretion is the tear-sac, and not the eyelids or canaliculi, the disease having travelled thither by continuity of surface. The local astringents employed against the lid-affection had proved equal to the removal of the ophthalmia from the parts which were freely exposed to their action; but had failed, owing to the obstacle offered by the anatomical arrangement of the excreting tear-apparatus, to correct the disease of the mucous lining of the sac.

During the past year, 1860, six cases have come under the author's care which were illustrative of this practical point. They show also that epiphora of apparently congenital origin is due to other causes than insufficient development of the osseous parietes of the tear-canal, or hereditary predisposition.

The subjects of the disease were healthy, but diathetically strumous. In one, an infant of eight months, in whom there were grounds for suspecting a syphilitic taint, acute abscess of the sac threatened; it was swollen, tense, and red. The canaliculus was slit while the child was under chloroform, and a probe was passed into the nasal duct, with the effect of removing the urgent symptoms in thirty-six hours. The five other cases were treated in the same way, with the addition of astringents. The attendants should be directed to press out the sac-contents every two or three hours.

The duty of examining the condition of the tear-sac in all cases of infantile or adult purulent ophthalmia will not need, after what has been said, to be urged upon surgeons.

Art. 91.—*On the spontaneous cure of Cataract.* By Dr. St. George Peachy.

(*Maryland and Virginia Med. Journ.*, Feb., 1861; and *North Amer. Med.-Chir. Rev.*, April, 1861.)

Case.—Mr. M—, fifty years of age, of correct habits, and accustomed to exercise a great deal in the open air, was the subject, in 1835, of inflammation of the left eye, attended with the most intense pain. The inflammation was subdued in the course of time, but he suffered occasional pain, and the sight of the right eye became impaired. In a few years the left eye became completely cataractous, but he was still able to see quite well with the right, so that an operation was not deemed advisable. The left globe was also unusually prominent. Dr. Peachy thus concludes the imperfect account of the case. "Several months ago, Mr. M. felt a renewal of the fulness, he first spoke of, in the globe of the eye—pain accompanied it, and suddenly he felt 'something give way.' To his astonishment, upon raising the lid, his sight had been restored to him as if by miracle, and for six months he has enjoyed as perfect vision as ever. In proof of this last assertion, in the presence of myself and others he has read with the left eye alone, an ordinary newspaper print with perfect ease and without the aid of glasses. The lens escaped into the anterior chamber, fell below the axis of vision, and has been undergoing gradual absorption. It was a hard, lenticular cataract, judging from its size and the amber colour so frequently mentioned by writers on this disease. The right eye has recovered its normal vigour, and Mr. M. has now perfect vision and no pain. Excepting the small amber-coloured body resting against the lower margin of the cornea, within the anterior chamber, no one would discover that Mr. M. had suffered from any such affection as that of which I have given you the above description, and of which I can find no such termination in any work in my possession."

Art. 92.—*On the treatment of the patient after operation for Cataract.* By Dr. J. J. Chisholm, Professor of Surgery in the Medical College of South Carolina.

(*American Med. Times*, April 13, 1861.)

"Physicians are aware that no one act is so apt to derange the harmony of the animal economy, as to deprive suddenly persons in good health of their accustomed exercise. The importance of excluding for a few days strong light from an eye recently operated upon being equally recognised, *a patch of dark sticking plaster, properly applied, will make a dark chamber at any time*, so that the very common practice of shutting out air and light from the room in which is placed a patient recently operated upon for cataract is now no longer required. The above plan of keeping patients in absolute darkness, and yet allowing them the enjoyment of exercise in the open air, so conducive to digestion and general well-being, is one of the greatest improvements in the surgical treatment of diseases of the eyes. The adhesive plaster, which is used only when the eye would be exposed to too strong light, is applied as follows: A piece one inch and a half long and one

inch wide, with its upper corners rounded off, is thoroughly moistened and applied to the closed eyelids by pressing its inferior edge firmly upon the face, over the lower orbital and molar region. The upper portion of the plaster is then allowed to fall upon the closed upper lid, when, if previously properly moistened, it will hold the lid secure by its own weight even without mild pressure.

"Another point of much importance in the successful treatment of cataract patients is, after the first twenty-four or forty-eight hours, allowing time for the union of the wound, to advise the patient to keep the eyes open, at intervals in the dark room, as long as it is found comfortable, night having excluded all injurious light from the apartment. This accustoms the retina to moderate light, which when daily increased by gradually admitting more light into the chamber, will soon enable the eye, when shaded by a coloured glass, to stand even some light after two or three weeks. The common practice of keeping the eye closed until eight or ten days have elapsed, when it is suddenly brought out in strong light for examination, cannot be too severely censured. The rational process of gradually introducing light from the second day of the operation will, by the tenth day, enable the eye to bear for several hours sufficient light to permit a very satisfactory examination. Experience has taught every surgeon that trouble after cataract operations often dates from the moment of inspecting the injured eye, and can readily be accounted for in the sudden and extreme changes of light to which the sensitive eye is during a few minutes exposed. Up to this examination all had gone well, immediately after it all is excitement, and the patient, racked with agonising pain, is fortunate if, after several days of torture, an eye with very indifferent vision is saved. Ample experience has proved the value of the above suggestions."

ART. 93.—*Extraction of a portion of coal, which had been in the eye ten years, with recovery of perfect sight.* By Mr. NUNNELEY.

(*Ophthalmic Hospital Reports*, No. II, 1860.)

When a hard substance enters and remains in the eyeball, in spite of whatever may be done, in the great majority of cases, sooner or later, the organ is lost, for if it be not destroyed by acute suppuration, commonly irritation is kept up after the more immediate active symptoms have diminished, and the ball becomes soft and ultimately shrinks and collapses, even though the foreign body be small and become imbedded. This wasted condition not unfrequently occurring after the lapse of some time.

CASE.—In February last, J. A—, a stout middle-aged man, a collier by trade, applied to me. He stated that ten years ago, while blasting in the pit, the shot exploded too soon, scattering the fragments of coal with great violence; that by some of these the left eye was struck, some entering the ball; that for six or seven weeks he suffered great pain, was nearly blind, and was unable to work, but that gradually the pain and inflammation ceased, and the sight of the eye became as good as it was before the accident, but that ever since there have been two or three black specks to be seen in the eye. He

has continued uninterruptedly at his work until five weeks before his application to me, when the eye and side of the face were violently struck by the fall of a large hard substance while at his work. The eyelids were bruised and swollen; but as he was not blasting nor using the pick, and saw the size of the piece which struck him, he is quite certain no particles entered the eye, and that it was simply a hard blow. However, since then he has suffered intense pain in and about the eye, great inflammation, and an inability to open the lids or to work.

I found every indication of acute irritative ophthalmia; there was intense photophobia and lachrymation; both conjunctiva and sclerotic were greatly injected; the iris was dull and inactive; the cornea, particularly at its lower half, was rough and hazy, where also was a dense opaque white patch, with two or three conjunctival vessels going to it, and behind this spot could be indistinctly seen, in the anterior chamber, a dark substance about the size of a swan-shot, but what it might be, whether a clot of blood, dark fibrin, or a piece of coal, in consequence of the opacity of the cornea it was impossible to say. Imbedded in the cornea, towards its upper and outer part, were two small portions of coal, and in the sclerotic conjunctiva near to them two or three very minute particles. As the man was quite certain no coal had entered the eye for ten years, and equally so that during this period, until the receipt of the blow five weeks ago, the sight of the eye was perfect, and it was evident that the particles in the cornea were imbedded in the tissue which was clear and healthy about them, the case was treated as one of traumatic inflammation. When I saw him after a few days he was very much relieved —the vascularity was lessened, the opacity of the cornea was much diminished; and as the dark spot in the anterior chamber had disappeared, I supposed it must have been a small coagulum which had been absorbed. I did not see him for a fortnight, when I found the eye as much inflamed as it was when I first saw him. He said that it had continued to improve until the three previous days, since when he has suffered greatly. He now said that he felt certain that the coal in the eye was the cause of all the symptoms, and begged me to remove it. None was to be seen except the particles in the cornea; and though, from the fact of the cornea about them being clear and healthy, I felt certain they were not causing any irritation, at his importunity I tried with a needle to extract them, but found, as I supposed, that they were deeply and completely imbedded in the structure, with a layer of clear, healthy, firm cornea passing over them, while the lower part of this was soft; I therefore declined to further meddle with them. Again in a few days he presented himself, saying he was certain there was a portion of coal deeper in the eye, which moved about, as, when the pain had violently returned, he had seen it by looking in the glass. I declined to accede to his urgent request that I should open the eye and search for what I could not see, but directed him at once to come to me should he again see the portion. In two days afterwards he called, bringing with him his wife; both of them declared that before leaving home they had seen the piece, though none could be then seen. They were directed to wait in town for a few hours, and should it again come into sight, immediately to return. After a few hours they did so, when evidently a portion of coal occupied the same place in the anterior chamber in which I had seen the dark substance on the man's first visit. I at once sent him to the Eye Infirmary for operation, where I also saw it; but on his being placed upon the couch it had again disappeared. I now made him get on and off the couch quickly and shake the head suddenly several times, which brought the particle into view. A section of the cornea was instantly made, when with the aqueous fluid escaped the portion of coal.

The next day the wound in the cornea had closed, its curve was restored, the inflammation and pain were much less, and the cornea was much less hazy. On the following day he was so much better that he returned into the country. In three weeks he went to work in the pit, the eye being perfectly well, and the sight as good as ever. The small portions in the upper part of the cornea remaining quiescent, as they probably will do, they having had nothing to do with the recent symptoms.

In this case, in all probability, the coal had been fixed in the posterior chamber, exciting while lying immovable there no mischief after the subsidence of the first irritation, but that by the concussion of the blow received five weeks before I saw him it had been detached and movable, becoming at once a cause of irritation by floating through the pupil from one chamber into another when disturbed by the motions of the body or head, and, on entering the anterior chamber and resting upon the anterior surface of the iris, a source of mischief only to be allayed by its removal from the eye. The sudden and complete restoration of the eye after so long a residence of a hard substance within its interior, and the active disease caused by it during the last ten weeks, is an interesting fact.

ART. 94.—*A new Apparatus for Eye-drops.* By Mr. CHALK.

(*Medical Times and Gazette*, March 9, 1861.)

This apparatus consists of a capillary tube and bottle. The former is made of a piece of barometer tubing, and is so contrived as to serve the purpose of a ground-glass stopper to the bottle, and a neck for the convenience of holding. The upper end of the tube above the neck is expanded into a cup-shaped head with a rim, over which is securely tied a thin piece of vulcanized india rubber, forming an air-chamber; the lower end is shaped into a smoothly cut, tapering stem, rounded at its point, so as to avoid any injury to the eye whilst in use. The bottle contains a fluid ounce, and should be kept about three parts filled with the solution, so as to keep the stem of the tube partly immersed therein.

By forcibly depressing the india-rubber covering with the point of the finger, the air is of course expelled from the chamber through the solution, and, as the pressure is withdrawn, is replaced by the ascent of a portion of the fluid through the tube to the chamber; this, when filled, contains about fifteen minims by measure.

When dropping the solution into the eye, care should be taken to make gentle and continuous pressure on the india-rubber cap, so as to avoid any access of air to the chamber, otherwise, as it becomes partly empty, an air-bubble is apt to form at the end of the tube, instead of a drop of solution. A very little practice, however, will suffice to show, better than any description, the readiest means of appliance.

When several bottles are used, they should be placed in a stand with compartments, each one being fixed therein by a brass collar made to take out and in when required.

The advantages of this apparatus appear to be simplicity of construction, cleanliness, uniformity in the size of the drop, hermetical closing of the s[illegible] the tube itself when not in use. To the

ready and experienced manipulator its usefulness for microscopic, chemical, and other purposes will be evident.

ART. 95.—*Seventh Series of Pathological Researches into the Diseases of the Ear.* By Mr. TOYNBEE, Aural Surgeon to St. Mary's Hospital, &c.

(Proceedings of Royal Med. and Chir. Soc., Feb. 12, 1861.)

Molluscous tumours in the external auditory meatus, their effects on the petrous bone and the brain, with suggestions as to their treatment, form the subject of this paper. Although molluscous disease has frequently been described by surgeons as occurring in various parts of the integuments, its presence in the outer meatus of the ear has not attracted their notice, notwithstanding the injurious effects so often produced upon the petrous bone and sometimes upon the brain. Mr. Toynbee supposes that these cases have hitherto been comprised under the terms *otitis* and *otorrhœa*, and where the death of the patient has occurred, its cause seems to have been ascribed to caries of the petrous bone, originating in otorrhœa. The singular characteristic of this disease, as pointed out by the author, is the tendency of the tumour to advance inwards, and cause absorption of the petrous bone. Thus in eighteen cases of this disease dissected by the author (and the whole of the preparations, with several drawings, were laid before the Society), although the tumour had varied in size from that of a millet-seed to a hazel-nut, the petrous bone was more or less absorbed in every instance. This absorption of the petrous bone had taken place without the production of caries, or even inflammation of the osseous tissue; indeed, the apertures made by the tumour had well-defined margins, as if effected by a chisel. In some instances the meatus is so greatly dilated by the tumour as to admit of the passage of the finger, as far as the membrana tympani. The effect of the tumour is to produce abscess in the brain, the result of irritation within the ear; in the cerebellum, when the posterior part of the meatus is the seat of the disease; in the cerebrum when the upper part is attacked by it. The circumstance that the presence of a molluscous tumour in the ear seems capable, by the irritation it induces, to produce an abscess in the brain is adduced as additional evidence in favour of the opinion that, when abscess in the brain coexists with disease of the petrous bone, the abscess, as a general rule, is caused by the affection of the ear, and the disease of the petrous bone is not produced by the abscess in the brain. Molluscous tumours, by their effect on the membrana tympani and tympanic cavity, frequently cause deafness of a serious character. The membrana tympani is often perforated, and sometimes so pressed inwards as to be in contact with the promontory.

Treatment.—Considering the tendency of molluscous tumours, when developed in the outer meatus of the ear, to advance inwards, and thus injure the membrana tympani, the petrous bone, and the brain, it is desirable that they should be removed at an early period of their development. For this purpose, in the early stages, before the bone is seriously affected, the tumour should be laid freely open by a crucial

incision, and the contents, as well as the capsule, wholly removed. In the later stages, when the attached surface of the tumour lodged in the petrous bone may possibly be in contact with the dura mater, considerable caution and delicacy are required to secure its removal. A crucial incision may be made into the tumour, and the laminated contents removed by the lever-ring forceps. In cases where the tumour has opened towards the meatus, and a copious fetid discharge is poured out, the syringe and warm water may be used for the purpose of removing the softened contents of the tumour. The process of syringing should be continued; for notwithstanding the free discharge into the meatus, the tendency of the tumour is to develop itself towards its attached surface, and cause injury to the brain.

ART. 96.—*On the means for preventing Caries of the Petrous Bone and Cerebral Abscess in Disease within the Ear.* By Mr. TOYNBEE, Aural Surgeon to St. Mary's Hospital, &c.

(*Medical Times and Gazette*, March 16, 1861.)

Supposing, then, that there is matter in the tympanum or mastoid cells which is causing irritation of the bone, and implicating the brain or its membranes, and that the performance of an operation for giving an outlet for the matter is not to be attempted, what treatment can be adopted with a hope of benefit? Mr. Toynbee's experience points to an issue or a seton as a remedy calculated to be of the highest service. One patient whose case is cited at length in his work 'On the Diseases of the Ear,' whom he saw some years since in consultation with Professor Miller of Edinburgh, who had unmistakeable symptoms of matter in the mastoid cells, attended by attacks of giddiness, insensibility, and intense pain in the head, was perfectly cured by the use of a seton, when all other remedies had been tried. In what way the seton acts the author cannot indicate, but he has seen several cases, and one very recently, of excessive severity, in consultation with Mr. Holman, of America Square, where the formation of an abscess outside the ear, there being no orifice in the bone and no dead bone detectable, gave relief to most urgent symptoms produced by the presence of matter within the mastoid cells. Two other cases of the same character are now under treatment. The insidious progress of cases, in which matter in the cavities of the ear injures the petrous bone and the brain, cannot be too often or too forcibly impressed upon the minds of the profession. Medical officers to insurance companies seem to be aware of the danger liable to follow long-continued discharge from the ear, but judging from cases constantly brought under notice, as a rule, these cases are too apt to be disregarded, until fatal symptoms supervene. The recent death of a young officer, who distinguished himself in the Crimean war and Indian mutiny, is cited in illustration:

CASE.—Captain R. B—, æt. 25, was brought to me by Mr. Teevan on January 2d, of the present year. He stated that when a child he suffered

from some infantile disease, which was followed by discharge from the left ear. This discharge continued, with slight intermissions, until I saw him, and it was accompanied by pain in and around the ear. Irritation within the ear, as is not uncommon, produced a polypus in the external meatus; on account of this polypus surgeons were consulted, and the growth was removed on one or two occasions. The irritation, however, increased, and while at Aldershott, at the end of the year 1860, it became so severe as to induce him to come to London to seek further advice. At the first visit, although the patient walked into my room, and did not feel himself seriously ill, I felt convinced that the petrous bone was diseased, and that there was disease in the cerebrum. There was a polypus in the meatus; the bone was tender all around the ear; there was great pain in the ear, which extended deeply towards the brain. I expressed my fears to Mr. Teevan of the very dangerous character of the disease, and stated my belief that there was an abscess in the cerebrum. In spite of all treatment, the head symptoms increased; the portio dura became paralysed, and the patient also lost the power of articulation, although he was perfectly sensible. Dr. Watson, at a consultation a few days before the patient's death, confirmed my opinion of the probable existence of an abscess in the brain, but as the friends objected to a post-mortem examination, the verification of the opinion could not be made. At least there can be no doubt, and there was no doubt in the minds of his medical attendants, that the patient died from injury to the brain produced by long-standing disease in the ear; and to me it is highly probable that if, in early life, the disease in the ear had been perseveringly combated, its fatal results might have been averted.

Art. 97.—*A new Instrument for the relief of Deafness.* By Mr. Pratt.

(*Medical Times and Gazette*, Feb. 16, 1861.)

This instrument, which is called "the Patent Auricle," is constructed with a reservoir, of a paraboidal form, for collecting the





sound, with the tubes conveying it to the ears having their orifice within the focus of the parabola.

Like the double stethoscope, the one sound is conveyed to both ears at the same time, whilst from its paraboidal form it collects the largest amount of sound within the smallest area. By the engraving it will be seen that the instrument can be worn without any aid.

It can be put on and taken off with the same readiness as a pair of spectacles; by ladies it may be worn under the bonnet, and rendered perfectly invisible.

We are told that it has been found very useful in several cases of deafness, and that it has been patented by Mr. Pratt, of Oxford Street, London.

Art. 98.—*An interesting case of Gunshot Wound of the Head.* By M. Jobert (de Lamballe).

(*Gaz. Heb. de Med. et Chir.*, March 6, 1861.)

At a recent meeting of the Academy of Sciences at Paris, M. Jobert read a case of gunshot wound, interesting both as regards the treatment which was adopted, and the anatomical changes induced by the presence of projectiles in the tissues.

Case.—The patient was a young French soldier wounded in the Crimea by a bullet which struck his forehead, and remained for twenty-two months in almost direct contact with the cerebral pulp, whence it was finally extracted with the trephine on the 23d of February, 1857.

The man stated that before striking his forehead, the bullet had encountered and run round the peak of his cap. He immediately fell into the trenches at a depth of seven feet and a half, and was conveyed to the ambulance, where he did not recover consciousness for twenty-four hours. Eight days after, he was forwarded to Constantinople and remained four months in that city; he then returned to the Crimea, and was present at the action of Traktir, which was fought on the 16th of August, 1855. His regiment was recalled to France in December of the same year, but the wounded man applied for no leave of absence, although the suppuration still continued, and although he frequently experienced a sensation of weight in the head, some insecurity in his gait and usual attitude, and a feeling of looseness of the forehead whenever he bent his head. Wearied at last by this precarious state of things, he applied, on the 19th February, 1857, for admission into the Hôtel-Dieu, when the following was the result of M. Jobert's examination:

On the forehead existed a clean-cut circular aperture about five lines in diameter. The probe inserted into the wound encountered a metallic substance, and the margin of the orifice was studded with granulations, and partial ossifications supplied by the periosteum; externally the skin was much attenuated and presented inodular scars. Conceiving the symptoms complained of to be dependent on the presence of the foreign body, M. Jobert proposed its extraction, which the wounded man consented to, and the operation and its consequences are described as follows in a clinical lecture:

"A cruciform incision was in the first place performed, extending in all directions beyond the limits of the accidental aperture, and the four flaps

were dissected and turned back, so as fully to expose the surface of the bone. The rasp was then used, and the osseous projections removed with a blunt-pointed knife. The orifice being, however, found too small to admit the removal of the foreign body, it was enlarged with a trephine, and the extraction of the ball—a most delicate operation—was proceeded with in the following manner:

"The foreign substance was carefully inspected, and seized in two opposite points of its diameter in the grasp of a forceps; and to avoid pressure on the brain, it was caused to revolve on its axis, and was finally extricated by a sort of screw movement.

"A black deposit, which was eliminated spontaneously and by slow degrees, was then observed in the deepest part of the wound. It was constituted by extravasated blood, which had been deprived of the contact of air, and resembled the brown layer which has sometimes been found within the abdominal cavity, long after the occurrence of some local injury.

"I also noticed, said M. Jobert, a remarkable phenomenon consisting in alternate distension and collapse of the cerebral substance, isochronous with arterial pulsation.

"The operation was concluded by closing the wound with the flaps. A fenestrated compress and a piece of fine linen steeped in cold water were the only dressings resorted to. Gentle and methodical pressure secured proper contact between the bleeding surfaces of the bones and of the soft parts, and union speedily followed, the wide aperture of the skull being in a great measure filled up by the flaps, the dura mater in the centre remaining however exposed.

"The projectile was a leaden bullet, weighing six drachms, its circumference measured upwards of two inches, its surface was rough, and it was flattened in the greater part of its extent.

"The patient was improving, when erysipelas of the face supervened on the 15th of March; the progress of the erythema was however checked in the course of two days by a simple application of the nitrate-of-silver ointment. On the 16th of April the wound presented the following aspect:—A puriform secretion oozes from a funnel-shaped cavity, in which alternate swelling and sinking are observable. The aperture of the bone is almost entirely closed by the inverted soft parts, the cutaneous surfaces of which are in contact with each other. The patient has altogether recovered his mental faculties, and the sufferings he complained of before the operation have altogether disappeared."

M. Jobert, after relating the case, proceeded to remark on its most interesting features. "Although the foreign body induced some morbid symptoms by its presence, it is nevertheless extraordinary to find a bullet lying for twenty-two months in contact with the dura mater, without occasioning inflammation of the brain or of its envelopes. In similar circumstances, the professor conceives that as a rule it is proper to enlarge with the trephine the aperture of the skull, in order to have sufficient room for the insertion of instruments, and to avoid the deeper penetration of the foreign body into the brain during the efforts made for its removal.

"It is further insufficient merely to enlarge the aperture; it is also necessary to grasp the projectile with a powerful forceps, and to extricate it by a rotatory motion of the hand.

"Trephining is usually followed by superficial exfoliation, and sometimes by more or less deep necrosis of the bone.

"This is the case when after the operation the wound remains exposed to the contact of air. But experience teaches us that matters take another and more favorable course, when the flaps are inserted into the perforation. In our patient no mortification of any part of the bone ensued, no exfoliation whatever was observed, and the suppuration was supplied by the deep-seated portion of the wound only, and by the dura mater, which granulated.

"The total absence of necrosis or exfoliation is therefore due to the immediate adhesion of the flaps to the surfaces divided by the trephine. The bleeding surfaces of the soft and hard parts united evidently by the first intention, thus affording us one more proof that the section of bones in nowise interferes with primary union.

"I have several times seen the patient since he left the hospital, and have ascertained that he has experienced no local functional disturbance; the funnel-shaped edges of the scar have also gradually sunk in. I should not omit to add that the throbbings, isochronous with arterial pulsation, have become indistinct, owing to the increased thickness of the scar, and probably to the development of a fibro-cartilaginous protection supplied by the dura mater, which M. Flourens appropriately considers as a kind of internal periosteum of the bones of the skull."

M. Jobert again saw the subject on the 14th of October, 1860, when no throbbings whatever were discernible in the wound. A complete cure has therefore been effected.

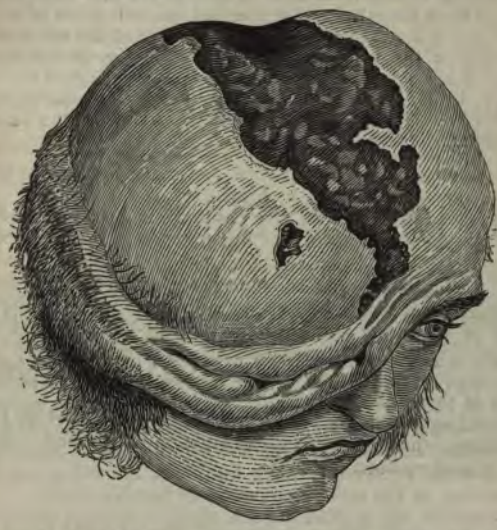
Art. 99.—*A curious case of Wound to the Head.* By Mr. Hilton, Surgeon to Guy's Hospital.

(*Medical Times and Gazette*, March 2, 1861.)

This case, which is almost unique, is one in which there was very extensive displacement of the scalp and occipito-frontalis muscle, with exfoliation of the large part of both parietal bones.

Case.—William D—, æt. 64, was admitted on December 19, 1860. He was a strong, well-made man, and had always lived temperately. About eleven months before, he fell from some rigging on to a bar of iron, and sustained an extensive scalp wound. This was dressed by a medical man who, having cut away the hair from the surrounding parts, brought the edges of the wound together by strapping. The strapping, however, occasioning pain in the wound, the man, after keeping it on eleven days, took it off, and for more than a month nothing was done to it. Erysipelas then set in. He had repeated attacks, and was frequently for some time insensible. In May, 1860, he first noticed that the scalp on the right side was moving down. He says that his medical attendant did nothing for it. About the middle of June, a large piece of bone, about the size of the palm of the hand, came away. (This piece has a small portion of the inner table attached, and belongs to the posterior part of the parietal bones, having two parietal foramina in it.) From that time the scalp had gradually slipped lower and lower, leaving a large surface covered with granulations, in the centre of which space the pulsations of the brain can be seen.

When admitted, there was a thick fold of skin which extended from a point about half an inch to the left of the nose, over the ridge of the nose, then resting on to the cheek, quite covering up the eye. It passed on to the middle line behind, depressing the cartilage of the ear. This fold could be lifted up so that the eye could be quite uncovered. The annexed woodcut



represents very faithfully the appearance of the parts. The part which is very dark on the vertex was an unhealed granulating surface. The part below down to the fold of skin was cicatrized.

The following is a brief extract from a clinical lecture by Mr. Hilton on the case:—"This man falls from a great height, lacerates the scalp, and bruises the bones of the skull. The portions of the scalp are brought in contact as far as possible, and apparently maintained there. Subsequently, the man neglects proper treatment, sloughing of the scalp follows, and then gradually the right half of the occipito-frontalis slips down. One of the great features in the case is the death of portions of the bone. Now although we know that the bones of the skull are repaired and receive their nutrition almost entirely from the dura mater, and that any injury of this kind on the exterior does not necessarily involve the internal parts, and experience has taught us that a very great exposure of bone upon the exterior of the skull scarcely tends to the death of the bone at all, yet we must remember that at the age of sixty-four the reparative power of nature is not very strong."

Mr. Hilton believed that very simple means would have prevented the deformity. If the parts had been brought together, the bone probably might not have died, and the scalp would not have slipped. He related a case in which erysipelas followed an extensive scalp wound, and was complicated also by two attacks of secondary hæmorrhage, which reduced the patient very much, and yet perfect recovery resulted with no loss of bone and little deformity. Mr. Hilton decided to remedy the deformity by removing the pro-

lapsed fold. He thought it better to divide the operation into two parts, first to remove the fold over the eye, only so that the supply of blood might not be quite cut off from the scalp above. On turning up this flap it was found that the eyebrow was lying over the eye, the orbicularis palpebrarum having sunk with the surrounding tissues. He therefore turned up the part which was overhanging, and made an incision through the skin just above the eyebrow, and then on the other side of the fold another incision, so that when the rest of the fold was removed the eyebrow would fall down into the gap inclosed between the two incisions. The man recovered well from this operation, and at a subsequent operation Mr. Hilton removed the rest of the prolapsed fold. He was discharged a week ago, being able to raise the lid and close his eye. The granulations over the part where the bone had been removed still remained unhealed.

ART. 100.—*On the relief of certain forms of Aphonia by Anæsthetic Vapours.* By Dr. FREDERICK D. LENTE, of Cold Springs, New York.

(*American Medical Times*, April 6, 1861.)

The recent occurrence of a case of this kind, of which the following is a brief abstract, induces Dr. Lente to give publicity to one very similar to it, which occurred in his practice a few months ago.

"T. B—, æt. 19, a carman, living in London, was attacked, in the early part of 1860, with hoarseness, enlargement of the sub-maxillary glands, and sore-throat. In March he applied at one of the dispensaries for relief, and was treated, but without much benefit; he then applied, in turn, at several other hospitals, including St. Bartholomew's; having, in the mean time, entirely lost his voice.

"In December, he applied to the district medical officer, who, on examining the throat, found the left tonsil slightly inflamed, but no other appearance of disease, and could detect no syphilitic taint or history. He, however, noticed considerable rigidity of the muscles of the jaw, and thought it advisable to try the inhalation of *chloroform*. 'He was accordingly placed under its influence, and its effect was truly magical, as he called out for his mother quite distinctly. He went home, and agreeably surprised his friends by speaking to them the first time in *eight months*, articulating every syllable.' A week afterwards his voice had not left him.

"The following is a brief history of my own case:—Miss M. W—, an unmarried female, about 40 years of age, has been for the most part bedridden for the last ten or twelve years, apparently from the effects of a violent and protracted attack of dysentery, for which she was treated by another physician. During all this time, she has also been more or less troubled with a reducible femoral hernia. She has never been at all hysterical, or even nervous, in the usual acceptation of the term. Some time in the early part of 1860, she lost her voice, so that she could not articulate above a whisper. This was a source of great annoyance to her, as she is very fond of conversation. She was, of course, very solicitous to have something done for her relief; but, as I could discern no lesion whatever about the fauces or larynx, and could assign no possible cause for the *aphonia*, I was at a loss

what course of treatment to pursue, and so did nothing, comforting her with the hope that she might one day regain her voice as suddenly as she had lost it.

"In December, 1860, her hernia came down, could not be reduced, and became strangulated, resisting all the attempts of Dr. Richardson, who was first called, and of myself subsequently, to reduce it. In our attempts, we used the inhalation of sulphuric ether twice each time, the patient, on her recovery, expressing her belief that she articulated with less effort, although she still spoke in whispers. Finally, a resort to the knife became necessary, and she was again brought fully under the influence of the anæsthetic. The operation was protracted from several causes, and she was under the full influence of the ether for nearly two hours. As soon as she had fully recovered from the effects of the anæsthetics, she exclaimed, apparently with the greatest delight, and in quite an audible voice, 'Doctor, I can speak,' and she has been 'speaking' fluently ever since, now nearly three months.

"I always had a suspicion that *hysteria* was at the bottom of this case of aphonia; and Dr. Richards, the reporter of the London case, asks, 'May it not be reasonable to conclude that this case was one of mere hysteria?'

"It is possible that many chronic forms of throat-difficulty, whether attended or not by aphonia, might be benefited, when all other means fail, as they are so apt to do, by the stimulating, anæsthetic, or antispasmodic effects of ether or chloroform, which treatment the perusal of these cases may induce others to try."

Art. 101.—*A word on Tracheotomy.*

By Mr. Maunder, Assistant-Surgeon to the London Hospital.

(*Lancet*, March 16, 1861.)

In the performance of tracheotomy, the introduction of a canula under circumstances requiring its use is usually deemed to be the most difficult step in the operation—a difficulty due to the constant and rapid elevation and depression of the trachea during respiration and deglutition. This difficulty is especially felt in children, in whom the windpipe is small and yielding. To overcome this obstacle, Mr. Maunder suggests a procedure which will facilitate the completion of the operation.

The trachea having been incised longitudinally, the operator should insert the point of a *double* hook through the incision into the windpipe, and hold the latter elevated and fixed; he should then slip up the clasp and allow the halves of the hook to separate by their own elasticity, and so to widen the slit in the trachea; this done, the canula may be passed into the tube with comparative ease, and the hook withdrawn.

Should any difficulty be experienced in the attempt to open the trachea after division of the softer tissues, the organ may be fixed in the adult by holding the cricoid cartilage firmly with the finger and thumb, or by a sharp hook inserted into the latter cartilage through

the upper angle of the wound. In the child the sharp hook should be used.

Although a double canula be used and the inner one be removed at intervals, cleaned, and replaced, still mucus becomes inspissated, and, adhering to the extremity of the larger tube, offers a serious obstacle to respiration. This inconvenience may be remedied, while the inner tube is being cleaned, by the careful introduction of a small elastic catheter—well warmed, so as to soften it, and oiled—quite through the larger tube just into the trachea. By this means a passage is cleared and the obstruction is removed.

Again, although a double canula be used, mucus collects at the further extremity, and cannot always be dislodged, either by cleaning the inner tube or by a catheter or feather; both must therefore be removed and cleaned, or be replaced by others. This necessity occurred in a case recently under the author's care; and in order to obviate the difficulty anticipated on re-introduction of the cleaned tubes, he first removed the inner canula, and then passed a small elastic catheter, well softened in hot water, through the outer tube into the trachea, and, maintaining it there, withdrew the tube over the catheter, and, as soon as it was cleaned, passed it back again along the catheter, still in the trachea, till the former occupied its original position; the catheter was then removed from the trachea.

The catheter served both as a tube by which respiration could be sustained, and also as a guide for the re-introduction of the canula.

ART. 102.—*A case in which a Foreign Body was extracted from the Right Bronchus by a bent wire, after Tracheotomy.* By DR. JOHN M. ADLER, of Davenport, Iowa.

(*North American Med.-Chir. Review*, NOV., 1860.)

CASE.—W. H—, æt. 7 years, while playing with a piece of pipe-stem held in the mouth, during an inhalation sucked it into the glottis. Severe spasmodic cough followed, nearly suffocating him; and, while his mother ran for medical aid, one of the neighbours, in making an effort to extricate the foreign body with the fingers, forced it into the larynx, from which it fell immediately into the trachea.

Various measures were at once resorted to with a view to its removal, including the use of emetics, the introduction of the probang, inversion of the body, and other means; and during a violent spasm of coughing, it was supposed that the foreign body had been ejected from the air-passages and swallowed. Continued dyspnœa and suffocative cough, however, subsequently gave unmistakeable evidence that such was not the case.

On Saturday, the 19th of May, six days after the accident occurred, I was called to see the patient, and found him half reclining on a couch, breathing with great difficulty, pulse 140 to 160, countenance anxious, skin hot and bathed in profuse perspiration. Careful auscultation at once revealed the existence of the foreign body in the right bronchus, the upper end projecting above the septum, and almost preventing the entrance of air into the left lung. There was nearly an entire absence of respiratory sounds in the right lung, but occasionally a hoarse, hissing noise was perceptible as the air was forced through the hole in the pipe-stem or found its way past the

obstruction. If inclined to the left side, the dyspnœa was greatly increased and the passage of air into the lung of that side almost entirely obstructed. When turned on the right side, the symptoms were less urgent, the air passing into the left lung with greater freedom. From the description of the piece of pipe-stem, given by the parents, and the signs revealed by auscultation, I concluded that the position of the foreign body was such as has been above stated. As repeated attempts had been already made to remove it by inversion and succussion of the body, it was at once decided that tracheotomy would be the only chance for relief to the patient.

The consent of the parents being readily given, on the following morning the operation was performed. Chloroform was administered until perfect insensibility was induced, and the head being thrown well back over the end of the table, an incision, nearly two inches in length, was made from the cricoid cartilage toward the sternum. The muscles were carefully separated along the raphé, and the isthmus of the thyroid gland, which was prolonged far down over the trachea, was divided to the extent of three or four lines. The vessels were carefully held out of the way by blunt hooks, and the trachea thoroughly bared to the extent of little over an inch. There was no hæmorrhage, except from the division of the thyroid body, which was promptly checked by the application of Squibb's solution of persulphate of iron. The larynx being fixed by the forefinger of the left hand, at the moment of expiration, with a narrow, sharp-pointed bistoury, four rings of the trachea were divided, the slit being fully an inch in length. The breathing through the new opening soon became regular and easy, and a slender pair of gullet forceps were carefully passed along the trachea toward the right bronchus. The end of the forceps came immediately in contact with the pipe-stem, grating against which, it slid readily into the left bronchus. Several attempts were then made to get hold of the pipe-stem, but failed, owing to the difficulty of expanding the blades of the instrument sufficiently to grasp it, as well as from the stony hardness and the roundness of the foreign substance. A partial hold upon it was several times effected, but the blades of the forceps as repeatedly slipped from it. Various other instruments were then used, but without success. The trachea was quite tolerant of their introduction, though during the whole time of their remaining in it continual coughing interfered much with the precise manipulation required to grasp and remove the foreign body.

All our efforts at extraction having failed, it was determined to leave the patient awhile, and to trust to the efforts of nature in loosening the foreign body by suppuration, and its being thus spontaneously expelled or rendered more easy of removal. He was therefore left until the next morning, with proper directions to the parents as to treatment.

In the morning his condition was much more alarming; pulse 150 to 160; mucous râles through the left lung; the right engorged, dull on percussion, and the entrance of the air into it apparently quite stopped; had passed a very restless night, and was much prostrated.

Assisted by Dr. Maxwell, efforts were again made to get hold of the foreign substance, which was easily accomplished by means of a wire hook, but we failed to remove it. The case appeared almost hopeless, but as it was evident that unless the obstruction was relieved, the patient would certainly die, it was determined to make another and final attempt in the evening.

About 6 p.m., assisted by Dr. Tomson, the patient was placed in the proper position, and similar attempts at extraction again made, which finally resulted in success. The instrument used was simply a loop of iron wire.

The method of employing it will be readily understood by reference to the familiar process of removing, with a loop of twine or wire, a cork from an empty bottle. The loop was passed along and beyond the pipe-stem and then withdrawn, bringing the pipe-stem caught in the loop, which passed around the end, the sides of the loop at the same time steadying the foreign substance in its passage through the trachea. The pipe-stem measured one inch in length, and nearly five sixteenths of an inch in diameter.

Immediate relief of the dyspnœa resulted; the slit in the trachea was closed with adhesive strips, and directions given to remove them in case it should become much obstructed during the night by the profuse mucous secretion from the lungs. Some light broth and a full opiate were administered. On the following day the wound was closed with four hare-lip sutures.

Perfect quiet, with strict antiphlogistic treatment, was followed for several days. In fourteen days from the time of the operation the wound was perfectly healed, with scarcely a perceptible cicatrix, and the little fellow was running about with his playmates as well as ever.

(B) CONCERNING THE TRUNK, ABDOMEN, AND PELVIS.

ART. 103.—*M. Civiale's Clinical Experience in the past year*, 1860. By Mr. H. THOMPSON, Assistant-Surgeon to University College Hospital, &c.

(*Lancet*, March 2, 1861.)

The following is a literal translation of an article recently published by M. Civiale in the 'Gazette des Sciences,' &c., and forwarded by this gentleman to Mr. Thompson for translation and re-publication in the journals of this country.

"I treated, in 1860, 54 patients affected with stone in the bladder: 36 in my private practice, and 18 in the hospital.

"A. *Private patients.*—Twenty-six of these patients had stone for the first time; 10 had been already operated on by other surgeons or by myself; the stone having reappeared, fresh operations were necessary.

"I operated on 26 of these patients by lithotrity; 24 are cured; in 2 others I was obliged to relinquish the operation, which appeared to aggravate the morbid condition of the bladder. One of these patients has died; the other still lives, and the stone remains in the bladder.

"All those calculous patients who were most favorably circumstanced, whose organs were still sound and in good health, and who had no other disease than a small stone, obtained a rapid and easy cure. For this class of patients the application of lithotrity appears to me to have reached great perfection: in fact, the stone is destroyed in a few minutes, and its *débris* are expelled with the urine; all suffering ceases, and the health is re-established and maintained. Surely this is all one can desire in the treatment of calculus.

"But lithotrity gives such good results only when its application is restricted to favorable cases, in which the stone has not had time to grow large, and to produce in the bladder lesions capable of altering the form and natural conditions of that organ. I hasten to add, how-

ever, that the proportion of favorable cases augments every day, and that they will become more and more numerous in proportion as calculous patients, informed as to their condition by their medical attendants, submit themselves to operation at the outset of the malady.

"Ten of those I treated had not displayed this prudence; they only sought the aid of art when their existence had become insupportable on account of incessant pain.

"In two of them the diseased condition of the urinary organs offered an obstacle to the application of lithotrity, and as lithotomy was equally contra-indicated, death occurred from the progress of the complaint.

"Four, having large stones, were operated on by lithotomy: one adult obtained a rapid and complete cure, the wound having cicatrized by the tenth day; in another adult the convalescence was tedious, and the cure incomplete. Two old men died in the second week after the operation.

"Two patients are still under treatment: one will be operated on by lithotrity, the other by lithotomy.

"In two others, who became ill at Paris when the winter set in and returned home, the treatment has been postponed until the spring.

"B. *Hospital patients.*—Amongst the 18 calculous patients admitted under my care, there were 3 women and 15 men, all adults, some old people.

"The first of these women, who had suffered during a long period of time, was so bad that any operation was contra-indicated; and the patient returned to her family.

"The second was in favorable condition as regards her general health, but the calculus was engaged in the urethra, where it was maintained by violent contraction of the bladder. A division of the canal sufficed to accomplish the extraction. This proceeding appeared to me, in these circumstances, to be preferable to that of crushing, which would have been very tedious and painful. The patient was rapidly cured.

"The third woman, an account of whom I have published, presented one of those extraordinary cases which one meets with at distant intervals. The stone, a phosphatic one, was formed upon a mass of teeth, of little bones, and of hair, arising from a hair-cyst which had opened into the bladder. All these bodies and the stone itself were successfully extracted by lithotrity.

"Four of the male patients were not in the condition which the application of lithotrity demands. Two were cut; one was cured, but the other has still a fistula. The third refused to submit to the knife, which indeed offered small chance of success; he died of renal disease. The fourth is under treatment.

"Another male patient was the subject, at the same time, of a stone of middle size and of strangulated hernia, requiring immediate operation, from which he died.

"The 10 remaining patients submitted to lithotrity were freed from the stone, but the cure in all was not complete. Amongst them, 2 retained some pain and disturbance in the functions of the bladder,

arising from organic lesions of that viscus, and against which lithotrity avails no more than lithotomy.

"The recent cases observed at the Hospital Necker present a fact worthy of notice.

"Calculous patients form two great classes. In one, which embraces two thirds of the cases, the organs retain their natural condition. Indeed it is only occasionally, and especially after bodily exercise, that the stone provokes some functional disorders, which cease by repose. Here the stone forming of itself the whole malady, it suffices to destroy or extract it by surgical operation for the patient to obtain a complete and speedy cure.

"In the other class, the phosphate of lime, or the ammoniaco-magnesian phosphatic calculi form and are developed under the influence of a morbid condition of the urinary apparatus. It is not uncommon for this state to persist after operation, to deprive the patient of the complete benefit of treatment, and even to favour the development of a new stone. These cases predominate in the foregoing account.

"To resume. Of 54 calculous patients, of which I have just presented a table, 37 have been treated by lithotrity. In 2 cases I was obliged to relinquish the treatment; 1 died; another retains his stone; 2 of them have not obtained a complete cure, because the stone has not formed the sole malady, but they are greatly relieved. The rest are cured.

"Seven were submitted to lithotomy, which saved 4 of them; but in 2 of these the cure is incomplete.

"Ten have not been submitted to any operation; 3 have died from the progress of the malady, and 1 after the operation for hernia; 1 continues to live with his stone. Three are under treatment, and will be submitted, 1 to lithotrity, and 2 to lithotomy. In 2 cases the operations are postponed.

"These facts prove anew the danger of long retaining the stone, and the utility of lithotrity when we apply it at an early period of the complaint."

ART. 104.—*On an operation for extracting a stone from the bladder by Urethrotomy and Dilatation of the Prostatic Urethra by means of a dilating-staff.* By Mr. WOOD, Assistant-Surgeon to King's College Hospital.

(*Proc. of Roy. Med. and Chir. Soc.*, Jan. 8, 1861.)

The author calls attention, in the first place, to some points in the relative anatomy of the pelvic viscera, so important in estimating the value of the different perineal operations of lithotomy. These points are illustrated by a diagram embodying the mean results of the dissection and measurements of upwards of forty subjects, and by drawings of the alterations produced by development from the period of birth to adult life, taken from actual dissections of subjects at birth, at two years and a half, eight and a half, and sixteen years, and in the adult. He shows that the surface of the perinæum lies in two planes, anterior and posterior, intersecting each other just behind the

bulb of the urethra; and that a line drawn from the middle of the central tendon perpendicular to the posterior of these planes indicates the axis of the bladder when moderately distended, entering it at the urethral opening, and thus forming a safe guide for the finger and instruments in the perineal operations of lithotomy. In young children, this line is thrown more forwards, forming an obtuse angle with the posterior plane. He shows that the nomenclature of the pelvic structures in anatomical works had not had sufficient reference to their actual position in relation to the axis of the trunk in the erect posture. He shows that the proximity of the bulb of the urethra to the anus and rectum varied, in the adult, from three quarters of an inch to an inch and a half. At birth, they are in close contact; below the age of puberty, from half an inch to three quarters distant from each other. This is not sufficient room for the performance of Allarton's operation without considerable section of the bulb, which he considered objectionable, if it could be avoided. Mr. Wood attaches much importance to the preservation intact of the deep layer of deep perineal fascia, where it is blended with the fibrous capsule surrounding the prostate, forming the grooved sheath of the levator ani muscle; and attributed to the median class of operations a greater safety against extravasation of urine above the lavator ani, from their preserving this layer of fascia entire. In the lateral operation, it was fairly divided, together with more or less of the levator ani. The author thinks that if the levator be cut at all, it is better to cut it freely, to allow a free escape for the urine; but that it affords greater safety to the patient, in all cases in which the size of the stone rendered it practicable, not to open its sheath at all, but to proceed by dilatation from the urethral surface of the prostate.

Mr. Wood then briefly passes in review the comparative merits and disadvantages of the lateral and median operations. The lateral operation had the advantage in celerity of execution, and, when practised with a free incision, in the more facile removal of a large or encysted stone, and in the free escape of the urine. In safety to the patient of adult years, however, it is inferior, from the impending dangers of hæmorrhage and pyæmia, by its extensive interference with vessels and venous plexuses; and from extravasation of urine into the layers of pelvic fascia above the levator ani, by the section of this muscle, its fascial sheath, and of the prostatic fibrous capsule. When the limited prostatic incision is attempted it is more liable also to the accident of the finger slipping from the staff and forcing its way between the bladder and the rectum, especially in the yielding tissues of young children. In the free incision, on the other hand, accidental section of the ureter and other important deep-seated parts has had fatal results. The median class of operations, depending upon dilatation without section of the prostate and neck of the bladder, has the advantages—that no cutting instruments enter the bladder or prostate, and that the incision is confined to aponeurotic structures in the most direct way to the bladder, and does not interfere with arteries or veins of any importance at all. In Allarton's method, the author thinks the means of accomplishing the dilatation are insufficient in the adult, and that additional dilators or gorgets

were objectionable on the score of complication and loss of time; that the bulb is freely cut, especially in children, and that the ejaculatory ducts are sure to suffer extensively from laceration by the probe tearing in the median line. Section of the bulb diminishes the chances of the patient, by exposing him more to the dangers of pyæmia and hæmorrhage, or the consequent formation of a stricture. The incision also, in Allarton's method, is placed so far forwards, and is so limited in extent, that great difficulty has been experienced in seizing and extracting a stone in a deep perinæum. Our increased experience of the results of lithotomy in the adult has not as yet been followed by such a diminution of its consequent mortality as might have been expected.

The operation practised by Mr. Wood is based upon the use of a staff opening at the curve into two blades, which admit between them, through a perineal incision into the membranous urethra, the forefinger of the operator, to effect the chief part of the dilatation. The dilating power is increased by the pressure of the assistant's thumb upon a lever, which causes the posterior blade to turn upon its axis and to press backwards upon the base of the bladder, holding it firmly towards the perinæum, so as to prevent its yielding before the pressure of the dilating finger. With the slender model which was exhibited, and which was made for a child, the author had dilated in the subject many tough adult prostates sufficiently to extract good-sized stones without injury to the levator ani or its sheath, or to the prostatic capsule. To make the preliminary incisions the author uses a very narrow-bladed knife. The form of incision practised is a lunated one, commencing two lines to the right of the raphé, just behind the bulb, and carried in a curve to a point midway between the anus and left tuber ischii, terminating opposite to the former. The membranous urethra is then opened (upon a groove exposed by the divergence of the blades of the staff) from the bulb to the prostate gland, a little to the left of the median line, as in the lateral operation, to avoid injuring the ejaculatory ducts. The lateral tension of the urethra rendered this very easy to do. The rest of the opening into the bladder was done entirely by dilatation between the blades of the staff. The patient, a boy aged nine years, was operated on in King's College Hospital, December 1st, 1860. He had had symptoms of stone one year. The dilatation was easily and speedily accomplished, the stone at once reached and removed, only a few drops of blood being lost. He made a rapid recovery; the urine passed by the meatus in the first week, and entirely by the natural passage in a fortnight, when he began to have control over its evacuation, which in the third week increased to entire command. In less than a month the wound was entirely healed. This shows how little injury was done to the neck of the bladder and muscles.

The author thinks that the form of incision used has all the advantages of the median operation, with much more room to use the forceps, &c., without injury to the bulb, rectum, and ejaculatory ducts, and with an easy capability of extension, in case of a large stone, in the site of the lateral operation, but ordinarily without division of the deep layer of deep perineal fascia. The advantages

of the dilating staff are: that the lateral tension renders a clean cut into the membranous urethra, and a fair introduction of the finger to dilate, easier to accomplish; that the dilating finger is guided into the prostatic channel with the increased certainty of a conducting blade on each side, and is aided by the dilating action of the blades holding down the bladder, and preventing its yielding before the pressure of the finger, allowing it at the same time more complete tactile perception of the resisting tissues than can be obtained by the use of gorgets or dilators, which are also thus rendered unnecessary. The pressure of the separated blades guards against the passage of the finger between the bladder and pubes on the one hand, and the bladder and rectum on the other. Lastly, there is a more positive certainty of avoiding section of the prostatic capsule, and exposure to the deleterious action of urine effused into the pelvic fascia above the levator ani, than can be obtained by the use of the knife or gorget in the prostate cutting in opposition to the contracting levator ani.

ART. 105.—*On the radical cure of Reducible Hernia.* By Mr. SYME, Professor of Clinical Surgery in the University of Edinburgh.

(*Edinburgh Medical Journal*, April, 1861.)

At the meeting of the Medico-Chirurgical Society of Edinburgh, held on the 6th March, 1861, Professor Syme introduced a patient who had been suffering from reducible inguinal hernia, and on whom he had lately operated with success.

The members of the Society (said Mr. Syme) were well aware that the radical cure of reducible hernia had long been regarded as a most important desideratum in surgical practice, and that many means of attaining this end had been proposed, which had not, however, turned out satisfactory. Professor Wütz̈er had more recently proposed a more effectual method, the only objection to which was the complexity of the apparatus required, which placed it out of the reach of many practitioners, and at the same time rendered it difficult of application. Mr. Syme had now to bring before the Society a mode of accomplishing the object, more simple than the plan of M. Wütz̈er, and he believed more effectual.

Mr. Syme would first remind the Society that M. Wütz̈er's operation consisted in invaginating or pressing up a piece of integument so as to cause it to occupy the inguinal canal, and in retaining it there by means of a needle until adhesions had formed, when the invaginated part acted like the cushion of a truss, and confined the bowel within the abdomen. The apparatus by which this was accomplished was very complicated. When its different parts had been put together, the instrument (smeared with an irritating ointment) was introduced up the external ring; a long needle was passed through it, so as to penetrate the invaginated integument and the parietes of the abdomen, where it was retained by means of a guard; after which, another part of the instrument was employed to compress the parts concerned. Not only was the apparatus very complicated, but

it was by no means easy or certain to introduce the instrument fairly within the external ring.

Since this method had been proposed, various modifications of the apparatus had been suggested, but certainly not with the effect of simplifying it.

The plan which Mr. Syme had now to recommend was of the simplest character. Instead of a complicated apparatus for filling up the inguinal canal, the surgeon only required an elongated body of some kind, such as a piece of bougie, a piece of an œsophagus-tube, a bit of wood, or even part of a wax or tallow candle; all the preparation required was, that a hole should be drilled through one end of the body chosen. The remaining apparatus consisted of a piece of strong thread and a needle, such as is used in sewing up dead bodies. The mode of application was as follows:—The string was passed through the hole in the end of the body; the needle was threaded with one end of the string, and laid with its concavity resting on the forefinger of the left hand, which was then passed up along the cord within the external ring; the needle was then turned round, so as to bring its point upwards, and passed, with an inclination to the left, through the textures, and brought out on the surface of the abdomen; the other end of the thread was then passed through the parietes in the same way, only that this time the inclination of the needle was to the right; the two threads were then pulled tight enough to draw the body up the canal, and up it must go. The piece of tube, as in M. Wütz̈er's operation, was smeared with cantharides ointment, to irritate the skin and favour the formation of adhesions. The two ends of the thread were then tied together; and, to prevent any chance of cutting through the skin too fast, a bit of elastic bougie was placed below them. For three or four days, or a week, a compress was placed over the groin, and retained in position by a bandage; and this was the whole process.

Mr. Syme presented to the Society a patient on whom the above operation had recently been performed. He was a seaman, twenty-one years of age, and had suffered from inguinal hernia for two years. The aperture was wide, and the tendency to protrusion very strong; it was, therefore, in every way very desirable that a radical cure should be effected. The patient was admitted on the 30th of last January; the operation was performed on the 1st of February; the tube was removed on the 11th; on the 25th the patient was up and walking about the ward, and had done so ever since. No truss had been worn till this evening; but, as the patient had some distance to come, Mr. Syme had thought it advisable to use the precaution of having one applied. The members of the Society might satisfy themselves that there was now no tendency to protrusion, no impulse on coughing, and that the parts concerned felt firm and indurated. The object of the operation had, in short, been perfectly attained, and the finger could be introduced nearly to its whole length up the invaginated portion which still retained its place. How far the cure in such cases would be permanent, Mr. Syme was not prepared to say; M. Wütz̈er must be responsible for the permanency of the result. What Mr. Syme had done was to facilitate the operative procedure, and to

attain M. Wützer's object in the simplest way, and with means which every surgeon had in his possession. An objection had been made to the operation on the ground that it excited too much irritation; but this very irritation was useful in exciting such an amount of adhesive action as was required.

Mr. Syme added, that the above was not the first case in which he had operated; but that he had done so repeatedly, and in no case with any bad effect.

Art. 106.—*A new radical cure for Hernia.*

By Dr. J. Morton, Surgeon to the Glasgow Royal Infirmary.

(*Edinburgh Medical Journal*, Dec., 1860.)

Case.—P. M'I—, æt. 31, was admitted into Ward XV of the Glasgow Royal Infirmary, 6th July, 1860.

Patient, who was admitted to be treated for a bubo on left groin, has had a scrotal hernia for three years on right side. The hernia is oblique, reducible, and very large. The inguinal canal is very much distended, and straighter than natural. Patient is constantly employed at hard work, and feels great inconvenience from the hernia. Health robust.

August 1st.—The bubo having been cured, a consultation was called to consider the propriety of operating for the radical cure of the hernia. Dr. Morton having objections against the modes in which the operation is usually performed, the consultants agreed that he should operate as he thought proper.

4th.—Patient was removed to the operating theatre, and chloroform was exhibited. A metallic ligature was passed subcutaneously around the sac at the lower part of the inguinal canal, excluding that part only which lay behind the cord, and fixed to a leaden plate by a nipple. A compress and bandage were then applied, and patient was directed to keep the recumbent position. Hab. Pil. Opii, gr. j, quotidie.

10th.—The bowels have not been moved since the operation, and the recumbent posture has been kept. On removing the bandage, considerable inflammatory action is found to have been set up in the line of the canal. There is also condensation of the tissues, and some suppuration at the point of puncture.

13th.—To-day, ligature was removed; otherwise as formerly noted; no bad symptoms. Omit Pil. Opii. Hab. Ol. Ricini, ℥ij.

29th.—Since period of last notice, the pad and bandage have been kept constantly applied to the part ligatured, and patient has been allowed to walk about the ward. When the compress is removed, and patient caused to cough or to walk about, the intestine is found to fill the inguinal canal, but it does not pass beyond the point where the sac was ligatured. Patient is recommended to wear a truss, and to return in a month or two, that a ligature may be applied at a higher point.

September 18th.—Patient returned to-day to show himself. He states that since he left the hospital he has been constantly engaged at very heavy work, but that the intestine has come down only once in the interval as far as the place where the ligature was applied. He has not worn a truss as directed, but only a simple roller bandage, which, from the mode of application, seems to be of no service as a compress. He states that he has not enjoyed so much comfort for years.

The operation performed in this case was as follows:—The contents of the hernial sac being returned, the patient, in the recumbent position, was put under chloroform; the sac was then grasped by the finger and thumb, and slightly raised; a handled needle, with the eye near its point, and furnished with a wire ligature, was introduced under the skin, and guided round the sac so as to include the greater part of the sac, if not the whole, care being taken not to include the cord; and the end of the needle being brought out as near to the point of its entrance as possible, the ligature being caught and pulled out, the needle is withdrawn.

It is plain that the needle cannot be brought out precisely where it was first inserted; and, in consequence, it is requisite to pass the end or ends of the ligature (for in this case a double one was used) again into the eye of the needle, and pass it under the skin so as to get the ends of the ligatures brought out at the same point, and there they may be tied. To give a fixed point, as well as to prevent the drawing inwards of the ligatures, Dr. Morton used in the above case a very small metal plate with a single nipple, over which the ligature used was fastened. A double ligature was used; and for this reason chiefly, that, in event of one being rendered unserviceable by the formation of a *kink*, the surgeon might use the other without being compelled again to use the needle. Besides, it was not improbable that the additional irritation produced by the second wire would not be injurious, but the reverse, and possibly not more than would be required for agglutination of the distended parts. Care must be taken that the ligature does not include the cord or vessels; and during the operation this can be ascertained by gently pulling the wire when the included parts are raised, and the cord can be felt below. A few days after its application, the ligature is removed. A little water dressing, or one equally simple, may be employed.

The advantages of this mode of operating are, chiefly, its simplicity, its causing little or no suffering, its effectually closing the hernial sac and causing its opposite sides to adhere, and that comparative freedom from dangerous or disagreeable consequences which is well known to accompany subcutaneous operations, and even other lesions of various parts, when the skin remains sound, or nearly so. In the aged it must be difficult to procure adhesion by pressure; wherens ligature would be certain to do so, and the risk of peritonitis almost infinitesimal.

ART. 107.—*A new operation for the radical cure of Hernia.* By Dr. CHISHOLM, Professor of Surgery in the Medical College of South Carolina.

(*Amer. Med. Times*, No. 5, 1860.)

The operation, as recommended by Dr. Chisholm, of South Carolina, is thus one of his pupils:

"These and ions have induced Dr. Chisholm not to rest satisfied es gained even by his modification

of Wood's operation, but to add a still greater improvement, simplifying the entire procedure, and obviating nearly all the objections which have been, or may be, urged to Wood's.

"The new operation is as follows: The scrotum having been invaginated upon the finger—as the only mode of guiding the needle in its passage—a long, strong, curved needle, fixed firmly in a handle, and armed with silver wire, guided by the finger, transfixes the scrotum at the apex of the invaginated portion, passes through the internal column, and appears through the skin of the abdomen, when one end of the wire is drawn out. The point of the needle is then drawn backwards, and disappears again in the canal. Its direction is then changed. Whilst still imbedded in the scrotum, and guided upon the finger, its point is made to traverse the external column of the ring, near Poupart's ligament, lifting the skin of the abdomen. By gliding the skin upon the needle, the point appears through the small puncture made by the first passage of the needle, when the other end of the wire is seized, the needle is unarmed and withdrawn through the scrotum. The finger is now removed from the canal, and the two ends of the wire being drawn upon the loop, it dissects the cellular tissue up to the columns, which it hugs closely. By twisting the ends of the wire the columns are felt approaching, until they are brought into such close apposition as to allow nothing to pass between them—the spermatic cord in its exit filling up all the available space remaining of the ring. When the ring is felt closed, the twisted wire is drawn firmly outwards, and clipped off as closely as possible to the skin, so that, when the traction of the skin of the abdomen is removed, the gliding back of the integuments to their normal positions conceals completely the ends of the small loop of silver wire. The scrotum has already fallen back to its pendent position, and the only trace of an operation having been performed is in the two small punctures, one in the scrotum and the other in the abdomen, which require a careful search to find them, and which will heal up in a few hours, hermetically incarcerating the silver wire.

"A moderate inflammation follows the operation, without much pain or swelling, and without any fear of suppuration. The wire is soon imbedded in a lymphy deposit, which will not only inclose it, thus isolating it from the tissues, but, at the same time, agglutinates the columns together as an additional security to the success of the operation. The patient is kept quiet in bed four or five days, opium being given to insure rest and prevent action of the bowels. When the inflammatory stage has passed, a cathartic is administered, and the patient can quit his bed, resuming his occupations in a few days. The silver wire remains a permanent application. An essential element in the success of the operation is that the loop encircles the columns of the ring near their points of attachment to the pelvis. Otherwise, the columns cannot be approached, the ring remains open, and the results can only be negative. If this step of the operation be carefully followed, a radical cure may be nearly guaranteed.

"The advantages of the operation are the short time the patient is detained in bed, the slight amount of inflammation produced, the dispensing with the use of a truss, and the security against relapse,

consequent on muscular effort—the reliance being placed, not on newly-formed adhesions, but on the silver wire. When the protrusion is large and the ring voluminous, several points of suture may be applied through the same punctures. The objection that the wire will always act as a foreign body is shown by experience to be unfounded, as it may remain harmlessly imbedded in the tissues for any length of time. Four cases only have as yet been so operated upon, and that only since November, 1860."

ART. 108.—*A case of Strangulated Oblique Inguinal Hernia, treated by inverting the patient.* By Mr. HENRY POWER, Assistant-Surgeon to the Westminster Hospital.

(*Lancet*, March 23, 1861.)

CASE.—On the 14th ult. William W— presented himself amongst the out-patients of the Westminster Hospital. He stated that he was forty-four years of age, a soda-water maker by trade, and that he had suffered from hernia for twenty years. He had always worn a truss, and though the bowel occasionally slipped down, he had always been able to replace it by himself. On the day previous to his coming, at five o'clock p.m., he was pulling down the sash of a window, when the hernia descended with much force in spite of the truss. He immediately went home and attempted to reduce it, but his efforts were fruitless; he therefore readjusted the truss and went to bed. He endured much pain through the night, and got no sleep. In the morning he felt sick and vomited his breakfast.

On examination a very tense tumour was found in the right inguinal region. It was about equal in size to a guinea-fowl's egg, and was extremely tender to the touch. I could not ascertain whether the hernia was direct or oblique. He complained of nausea, and of pain radiating over the whole abdomen.

I placed him on his back, with the knees drawn up, and for five minutes endeavoured to reduce the hernia by steady pressure, but no impression whatever was made upon it. Recollecting the plan which was rediscovered or reintroduced by my friend Mr. Jessop, of Cheltenham, and of which several successful instances are on record, I obtained the assistance of one or two of the students and placed the patient on his head. On again gently compressing the tumour, I had the satisfaction of feeling it quickly recede, and in less than a minute it entirely returned, with an audible gurgle.

ART. 109.—*Some suggestions for an improved practice in Strangulated Hernia.* By Mr. BRYANT, Assistant-Surgeon to Guy's Hospital, &c.

(*Proceed. of Med. Soc. of London, Lancet.* March 30, 1861.)

Having shown the benefit which the use of chloroform has already conferred on patients suffering from strangulated hernia, the author proceeds to consider how far the recognition of the truth should influence our practice, and in what way we can turn the information to account. The lesson to be learnt is not a difficult one; for if it be true that we possess in chloroform the most efficient means for producing complete relaxation of the muscular system, and with it, of

the parts involved in hernia, and if it be acknowledged that a patient can be more speedily and effectually brought into that relaxed and desirable condition by such a method than by any other which we have been in the habit of employing, there is but one conclusion, and that is, that we should, in all cases, employ at once the most certain and most efficacious practice, and neither waste time by delay, nor prostrate the powers of our patient by the use of other remedies, when we possess one so incomparably their superior. By the use of chloroform the ends which we have been in the habit of seeking by other means can be more speedily attained, and with greater certainty; delay is not experienced, and durable depressing influences are not excited; and, therefore, in the majority of cases of strangulated hernia, the administration of chloroform should be primarily selected.

In quite recent hernia the warm bath and full doses of opium, followed by the gentle application of the taxis, may be expected to succeed, and it is in such, and in such alone, that Mr. Bryant advises their use. But such cases in hospital practice are unfortunately rare, and it is too true that four, five, six, seven, and even ten days are the average periods of strangulation of the cases admitted into Guy's Hospital.

When the patient has been completely brought under the influence of chloroform, the force which is required to reduce the hernia is simply nominal; anything like violence must prove injurious, and would be unwarrantable. The most moderate application of manual pressure is sufficient, if success is to be obtained; and if it should fail, no extra force will be more beneficial: if success is to follow its application, moderation will suffice, and if failure, force will not succeed. If failure ensue, herniotomy should be at once performed; no other means are left from which to select. The most simple and efficient means have been employed, and have failed, and an operation alone remains.

Mr. Bryant dwells on the evils of prolonged or forcible taxis, and of delay, as caused by the use of other means, and states that he believes it would be better for all cases of strangulated hernia to be treated at once by the administration of chloroform, followed by the gentle taxis; and on that failing, by herniotomy, than that any risk of delay should be occasioned by the use of remedies, or of injury to the strangulated bowel by the continued and repeated applications of the taxis. He believes that by such a practice the cases of death from strangulated hernia would be but rare, and the cases of maltreatment would be less numerous.

The author then proceeds to consider the after-treatment. He doubts whether he is far from the truth in asserting that the one point of anxiety which all surgeons of the past or present generation have experienced, after the reduction of a strangulated hernia, is to hear that the bowels had regained their functions, and had fairly operated. Within limits, such anxiety is a natural one, but it should not be so strong as to urge the surgeon to interfere with nature's processes, and by artificial means to stimulate the bowels' action. In "the good old times," when pathology was in its infancy, and the processes by which injuries are repaired were but little understood, the surgeon believed

the constipation to be the disease, and regarded the hernia simply as its cause; and although it is true that his treatment was at first directed to return the descended bowel into the abdominal cavity, having done so, he could see no reason why the normal action of the intestines did not at once return; and, in his ignorance, he accordingly employed his skill, aided by the force of the pharmacopœia, to overcome this constipation; believing that, by doing so, he was acting only in accordance with correct practice. The modern surgeon, with his improved knowledge, recognises the want of correct principles on which such evil treatment was directed: he knows that a strangulated bowel means an injured or an inflamed one; and that in proportion to the amount of injury it has sustained, is rest, absolute rest, required to allow of repair being carried out. He knows also, at the same time, that as soon as this injured or inflamed bowel has partially recovered, its natural functions will return, and, as a consequence, the constipation will disappear. It is on such a principle that all modern practice is based. Instead of goading the injured bowel to a premature action, our efforts are now directed to maintain their repose; in lieu of purgatives, as of old, to overcome the constipation, we now prescribe opium to secure rest, with the confidence that as soon as the normal condition of the intestines is restored their normal action will reappear, and with it convalescence.

In the next place the author dwells on the value of the opium treatment, giving a caution against carrying it out too far; and after this he gives a table of cases, showing how long a time may elapse after herniotomy without any action of the bowels taking place, and without the least cause of apprehension. In nearly sixty per cent. of the cases tabulated, the bowels did not act before the fourth day; and, in twenty-two per cent., seven, ten, twelve, and twenty-three days passed without any bad result taking place.

He shows, further, that it was a rare thing for any untoward symptom to make its appearance after the reduction of a strangulated hernia from simple constipation; and that such a condition may be tolerated for many days without the least apprehension of alarm. If this were true, he then asked why administer purgatives? If decided symptoms appear, evidently the result of a loaded intestine, some medical interference may be called for; but let it be of the mildest description, such as a simple enema, or a small dose of olive or castor oil. More powerful purgatives do harm, and should never be administered. Mr. Bryant would rather err on the side of delay than by over-anxiety stimulate, at an early period, an injured, although returned, bowel.

ART. 110.—*A new operation for the radical cure of Hernia.* By Dr. AGNEW, Surgeon to the Philadelphia Hospital.

(*N. American Medico-Chir. Rev.*, Jan., 1861.)

This mode of operating is described in the following terms:

"The instruments necessary for the operation consist, first, of two semi- steel, three inches long and one and a quarter in

circumference, which can be separated from each other by a screw in the handle of the instrument, and on the internal face of the lower blade of which are two parallel, longitudinal grooves; secondly, of a spear-pointed needle, slightly curved at the extremity, and supported on a bone handle; and, thirdly, of several stout needles of from two to two and a half inches in length.

"A portion of the scrotum is carried in, followed by the metal cylinder, and thrust up to the internal ring. The blades are now separated by means of the screw, and the long needle, armed with a thread of silver wire, is carried along one of the grooves to the upper end of the cylinder, and then made to pierce the exterior parietes of the inguinal canal. The thread is then removed from the needle, the latter withdrawn, and the other end of the wire passed through its eye, when it is passed along the other groove and made to emerge a short distance from the first. It is again unthreaded, and after its removal the two ends of the wire are drawn up tightly and twisted over a small roll of lint. This effectually holds up the small plug of integument to the very summit of the canal, and as the silver thread manifests but little disposition to ulcerate out, it may be allowed to remain for a considerable time. The second and most important step of the operation consists in screwing the handles of the instrument completely together (thus separating the blades in the canal to their greatest possible extent), and then, carrying across the canal, between the blades, four or five threads, at equal distances from each other. The first thread should be composed of silk, and be introduced as near the internal ring as possible. The remainder should be of silver, the last one being close to the external ring. These transverse threads can be lodged in the canal with great accuracy by this method, the cord being protected from injury by the posterior blade of the instrument. This latter being withdrawn, the patient is confined to his bed, the parts being protected by a compress and roller, and the wires should be removed as soon as the plastic exudation has bound the invaginated plug to the walls of the canal, which in the cases operated upon required twelve days."

Art. 111.—*Remarks on Entero-Epiplocele.*
By M. Jobert (de Lamballe).

(*Journ. of Pract. Med. and Surgery*, April, 1861.)

On the 3d of August, 1860, a woman, aged sixty-one, suffering from strangulated hernia, was admitted into M. Jobert's wards, at the Hôtel-Dieu. The patient was a vigorous woman, who had borne eight children, had always enjoyed good health, and was not compelled by the nature of her occupation to any violent muscular exertion. She stated that, some twelve years previously, she had noticed the presence of a small swelling in the left groin, which had since persisted without occasioning pain or inconvenience. The digestive functions had never been disturbed, and the use of a truss had not been considered necessary. The matter therefore appeared unimportant, and caused her no anxiety, when at 7 o'clock a.m., on the 3d of

August, while sweeping her room, she suddenly noticed an increase of size of the tumour, which became painful, and immediately induced colics and vomiting of bilious matter. At 10 o'clock a surgeon was sent for, who for nearly half an hour endeavoured, but ineffectually, to reduce the hernia. At 2 o'clock in the afternoon, taxis was again attempted, without any better result, and an aperient enema was exhibited, but no motion followed. The pain and vomiting of greenish fluid continued.

At 6 p.m. the patient was admitted into the Hôtel-Dieu, and the tumour was covered with ice. Emesis persisted throughout the night and subsequent morning, preserving the same colour, and now emitting a marked stercoral odour. The pulse was small and frequent, the surface cold, unceasing nausea was present, together with much prostration, and slight abdominal tenderness above the tumour, which was somewhat elongated transversely, elastic, and not perceptibly fluctuant.

At a glance, M. Jobert recognised the presence of crural hernia, and despite the obesity of the patient, expressed a decided opinion, that although a portion of intestine was incarcerated, a fact demonstrated by the general symptoms, a great part of the tumour was formed by the omentum. The long period during which it had existed further induced the professor to believe that adhesions were present, which would constitute a serious objection to protracted efforts at reduction. He therefore confined himself to a brief attempt, and after representing to the patient the alarming character of her symptoms, the inutility of merely medicinal measures and the danger of further loss of time, proceeded as follows with the operation:

A fold of the skin, perpendicular to the long diameter of the tumour, was first divided with one sweep of the knife, and the thin subjacent cellular layers were then cautiously incised, until the outer surface of the transparent sac was reached and exposed. As soon as the latter was opened, an enormous omental mass escaped, loaded with fat, and somewhat congested. This mass was forcibly raised, so as to display a convolution of the intestine, of a deep purple hue. The operator then inserted his finger into the wound in order to ascertain the precise seat of the constriction, and having found that the pressure was caused by the neck of the sac, he divided it in three places, above, inside, and on the outward side, with Cooper's knife.

M. Jobert considers that this procedure is most favorable to the regular dilatation of the orifice, and averts the perils which authors ascribe to the operation.

The intestine, being in a healthy state, was returned with ease into the abdomen, but the omentum was left in the wound for a purpose which we shall presently explain. A simple dressing was applied, together with very slight pressure. Two liquid motions followed immediately after the operation; eight ounces of Seidlitz water were nevertheless exhibited, and the vomiting entirely ceased. The next morning at 11 o'clock the general condition of the patient was found to have much improved. In the evening the pulse was less frequent, the skin being still hot, and in the night some sleep was obtained. On the 5th of [illegible] abdominal pain having disappeared, and also the

sickness, beef-tea was allowed. No change was observed on the 6th, and strong soup was prescribed. The dressing was removed on the 7th, and the suppuration was found to be very moderate in quantity. The omentum had formed adhesions with the adjacent structures, its prominences had sunk in, and it had acquired a healthy red colour. A compress with cerate was applied, and the case progressed satisfactorily up to the 15th, the general condition of the system being excellent, nutriment being taken, and an abundant and healthy suppuration having become established over the entire omental surface; the exuberant granulations were now and then touched with lunar caustic, and the same dressing was persevered in.

On the 16th the premonitory signs of erysipelas were first descried, which rapidly extended from the inguinal region to the waist and to the thigh, and much exhausted the patient. On the 1st of September, however, although the erysipelas had not entirely faded away, and in spite of the unfavorable influence of this untoward complication, the wound was nearly healed, and the omental mass had so perfectly assimilated with the neighbouring parts as to be in nowise distinguishable from the common tissue of scars.

In the clinical remarks suggested by the foregoing case, M. Jobert explains why he had carefully abstained from persevering in attempts at reduction, and why he had left the omentum in the wound, instead of returning it into the abdominal cavity.

Whenever, said M. Jobert, the protrusion is of old standing, it is fair to surmise that adhesions have formed, and that protracted taxis may occasion mortification of the bowel. It is, moreover, almost impossible, when voluminous hernia of the omentum coexists with enterocele, to reduce completely the contents of the sac. The intestine being overlapped by the omentum, taxis has but an indirect action upon the bowel, hence the great difficulty of reducing them both together. When, therefore, the symptoms clearly show that the intestine is strangulated, it is far more rational to perform the operation without further delay, than to trust to unavailing manipulations, which postpone the use of the knife, and much lessen the chances of ultimate success.

As to the course to be adopted with regard to the omentum when the hernia is exposed, M. Jobert considered himself justified by the results of his researches on the subject of abdominal wounds, to express himself as follows:

Either the omentum is mortified, and it must then perforce be left in the wound, or it is in a healthy state and easily reducible; in the latter case it may, it is true, be returned into the abdomen, but this procedure is not entirely free from danger, and it is more prudent not to adopt it; when the omentum is strangulated, and more or less inflamed, it should never be reduced, but the intestine alone should be replaced, The omentum, if left in the wound, soon adheres to its various parts, thus obviating the possibility of a recurrence of the protrusion. The external portion mortifies and falls away, but the remainder freely granulates and unites with the edges of the outer wound. It has been feared that this process might subsequently give rise to a dragging sensation of the stomach, but this apprehension has

been founded more upon a theoretical view of the functions of the omentum, than upon any carefully observed facts. Indeed, as the stomach suffered no particular sensations of dragging when the omentum was included in the hernia, M. Jobert cannot conceive why its functions should be more interfered with, from the fact of adhesions having become developed between that portion of the peritoneum and the hernial ring.

ART. 112.—*Three cases of Orchitis treated by incision into the Tunica Albuginea Testis.* By Dr. HUTCHINSON, Surgeon to the Brooklyn City Hospital, New York.

(*American Med. Times*, Nov. 10, 1860.)

The above operation, originally proposed by J. L. Petit, was revived, and has been practised by M. Vidal de Cassis in more than 400 cases with success. In the above cases, it was in the highest degree satisfactory—relieving at once the excessive pain arising from the strangulation of the inflamed organ by the unyielding covering, when all the usual remedies had failed. Dr. Hutchinson makes the incision through the tunica albuginea with great care, so as to avoid wounding the seminiferous tubes, which might lead to the establishment of a seminal fistula.

CASE 1.—M. L—, seaman, admitted into ward 20, March 16, 1860, with orchitis, which appeared five days before, after the suppression of a gonorrhœal discharge. The testicle is four times its normal size, and intensely painful. He was treated with tobacco poultices, mercurials, &c. &c., for eight days, when the gums became touched, without the slightest improvement; the pain was so intense that he could not sleep. On the 24th of March, Dr. Hutchinson made an incision three quarters an inch in length over front of testicle, down layer by layer through the tunica albuginea, so as to lay bare the gland. On the following day the patient stated that he had been entirely free from pain since the operation; he had slept well at night for the first time since he entered the hospital; the swelling is subsiding; wound allowed to heal by granulation. Two days subsequent to the operation, the discharge from the urethra returned.

April 10th.—Wound has entirely healed, and the testicle has regained its normal size and sensibility.

CASE 2.—Peter G—, æt. 37, seaman, admitted March 14, 1860, with hydrocele of the left side of four weeks' duration. On the 17th, an iron-wire seton was passed through the tunica vaginalis; this was followed by some inflammation which terminated in suppuration, the pus being evacuated by an incision. On the 5th of April, the parts on the left side had regained their natural condition, but the right testicle had become swollen and painful. The ordinary treatment for orchitis having been used for two days without relief to the intense pain, an incision three quarters of an inch long was made very carefully down to the body of the testis. This gave almost immediate relief, and at the end of two weeks the testicle had resumed its usual size, and the wound had entirely healed.

CASE 3.—James G—, æt. 26, seaman, admitted April 12, 1860, with orchitis, of twelve days' duration, which followed the suppression of a gonorrhœa.

The testicle is considerably enlarged and very painful. He had local depletion, tobacco, poultices, mercurials to ptyalism, &c., without benefit.

April 16th.—The tunica albuginea was divided as in the preceding cases, and with the same relief to the swelling and excessive pain. He eloped on the 28th, cured.

ART. 113.—*On the employment of pressure in the treatment of Buboes or enlarged glands.* By Dr. D. MACPHERSON, Inspector-General of Hospitals.

(*Madras Quarterly Journal of Med. Science*, Jan., 1861.)

"I may state," writes Dr. Macpherson, in a recent report on the establishments at Singapore, "that Assistant-Surgeon J. Cowpar is in the habit of treating successfully, hard, indurated, enlarged glands in the groin, by the application of a truss, two to four hours daily. During the past year he had sixteen Europeans under him for this usually very tedious and troublesome ailment, the truss was kept applied twice daily for two to four hours at a time, and all terminated successfully. In some cases the bubo disappeared under four days. But the average period required, to cause absorption of the gland, was nine days. I have some experience in the successful application of direct pressure by weights to buboes, but that adopted by Mr. Cowpar is more under control; his treatment is so simple and efficacious, I would suggest that it may be made generally known; I have not met with it before."

ART. 114.—*On the treatment of Gleet by compression.* By Dr. G. P. HACHENBURG, of Springfield, Ohio.

(*North American Med.-Chir. Rev.*, Sept., 1860.)

Dr. Hachenburg relates four cases of gleet, in which the treatment employed was gentle and prolonged compression by distension of the urethra. The instrument is of ivory or horn highly polished and of various sizes. It is, indeed, a short bougie with a button or shoulder turned at one end to prevent it from slipping into the urethra.

"Before its introduction at bedtime," says Dr. Hachenburg, "the urethra should be well washed out with Castile-soap and water, followed by a mildly astringent lotion. An instrument of a size which will well fill the urethra, is then oiled, and with gentleness introduced. In a short time the passage will accurately and tenaciously grasp the instrument, and it is retained for the night without support or bandage. In the morning it is removed, followed by another cleansing process, which is repeated occasionally through the day. The application should be renewed every third or fourth night, until the cure is accomplished, which will occur after the third or sixth application. In removing the instrument in the morning there is sometimes a difficulty in getting it out of the urethra, so firmly is it held within

its grasp. A gentle rotatory movement, however, will soon disengage it, its exit being then readily accomplished by traction.

"The immediate effects of the use of this plan of treatment are uniformly of an efficient character. The first application often increases the tenderness of the parts, and even sometimes causes a slight hæmorrhage; but a tolerance of the use of the instrument is soon established, until it no longer becomes a source of inconvenience. As this tolerance is established, we are favorably progressing with the cure of the case, for in the same ratio the discharge diminishes and soon ceases to show itself entirely.

"In some cases, before the introduction of the instrument, I sprinkle it with calomel, tannin, or morphia, according to the indication. However, in most of the cases, these topical applications are unnecessary."

The following cases are presented to illustrate more particularly the efficacy of this plan of treating gleet and certain forms of spermatorrhœa :—

Case 1.—In 1857, Mr.—, æt. 25, of sedentary and temperate habits, had gonorrhœa for the second time, and, owing to neglect in the treatment, the disease terminated in obstinate gleet, which resisted many of the usual remedies for more than six months. Injections and blistering failed to give relief, and a cauterization was once resorted to, which greatly aggravated the disease. The bougie was likewise tried, medicated and otherwise, but without apparent benefit. A respite of all treatment was allowed for several days, when the compress was applied as described. The patient slept well through the night, and on removing the instrument in the morning, there was some discharge of blood, accompanied with tenderness. In three or four days this had subsided, and the instrument used as before. Less tenderness and no bleeding followed this application. Three or four more applications were made at proper intervals, under which the discharge finally ceased, leaving the patient free from the disease ever since.

Case 2.—In the same year, Mr.—, æt. 35, had gleet for nearly a year, for which he said he had been a patient at a northern hospital for several months. The disease resulted from repeated attacks of gonorrhœa and a dissipated course of living. Temperance was enjoined, with physical and mental quietude; his bowels regulated with aperients, and the compression resorted to every fourth and fifth night for about three weeks. The discharge being purulent and viscid, the instrument was medicated with calomel with much benefit. The discharge gradually ceased, and the patient was dismissed. In this case there was a ready tolerance in the use of the instrument.

Case 3.—In 1858, Mr.—, was attacked with syphilis shortly before leaving California, and had nothing done for his relief until his arrival at this place. Under the usual local and constitutional treatment, the patient rapidly improved. After the healing of the external chancres, which were situated principally under the prepuce and on the gland, a gleety discharge followed, which proved to be of a very intractable character. Injections, cauterization with Lallemand's instrument, the bougie, and other remedies alike proved inefficient. Compression as described was finally resorted to every third night for two weeks, under which the local symptoms subsided, leaving the patient free from what we supposed to be a chancre within the urethra.

Case 4.—A student was a victim to spermatorrhœa for many months, the

result of the pernicious practice of onanism. Believing the nocturnal emission to be induced by the morbid sensibility, as well as the congested condition of the caput gallinaginis, I ordered compression to be applied to it by the common flexible bougie of large size. The instrument was well oiled, and carefully introduced into the urethra and retained for the night. This was repeated once a week for two months, to the complete relief of the patient. The use of the bougie caused little or no inconvenience.

ART. 115.—*On the diagnostic value of the Iodine Injection in Fistula in Ano, and on incision from within outwards.* By M. A. AMUSSAT.

(*Journ. of Pract. Med. and Surg.*, Jan., 1861.)

When exploration with a slender probe has failed to indicate whether the tract of a fistula in ano is complete or incomplete, injection of tincture of iodine into the sinus is the procedure most likely to remove doubt. The surgeon inserts the forefinger of the right hand into the anus, turning its pulp towards the spot where he suspects the internal orifice of the fistula to be situated. An assistant then injects the iodine, and if *even a few drops* penetrate into the bowel, the smarting complained of by the patient and the characteristic yellow stain which the iodine leaves on the surgeon's finger establish the diagnosis with all desirable certainty.

After this has been done, iodine injections, which sometimes effect a cure, may for a time be persevered in, and render further investigation unnecessary. In the contrary case, the knife must be resorted to; but instead of introducing the grooved conductor from without, which the irregularity of the tract sometimes renders very difficult, and to obviate the necessity for painful research, which occasionally leads to perforation of the denuded and thinned intestine, it is both safer and more expeditious to adopt an opposite course, and introduce the conductor into the sinus through its internal aperture.

In a case of this description, which he recently attended jointly with Dr. Chaillou, M. Amussat adopted this practice with much advantage. Several injections had failed in healing the fistula, and incision was resolved on. Up to this period, however, the style had never passed the internal aperture, despite the extreme care with which the investigations had been conducted. M. Amussat then adopted the following plan: The patient, having been placed in an appropriate attitude, inhaled chloroform, and when anæsthesia was induced, the surgeon inserted into the intestine a *speculum ani*, which he opened so as to display that part of the mucous membrane where the orifice of the tract was supposed to exist. He then bent a slender silver conductor, and soon succeeded in introducing it into the internal orifice of the sinus, and gradually brought it out through the external aperture; the speculum being still maintained *in situ*, he divided the soft parts by running the knife along the groove of the conductor; and although the tract was extensive, the consequences of the operation were not serious, and a complete cure was promptly effected.

ART. 116.—*A simple mode of insuring the proper healing of Anal Fistulæ after Incision, without plugging.* By Dr. J. J. CHISHOLM.

(*American Medical Times*, April 13, 1861.)

CASE.—Mr. R—, æt. 30, of good health and robust frame, had been for a long time annoyed by a rising on the left buttock, which frequently formed an abscess and discharged. The escape of pus continued for some days, then gradually diminished until scarcely perceptible; the part, however, remaining always more or less moist. As business necessitated much horseback riding, the irritation was kept up by this exercise. Upon examination, a probe traversed a blind fistulous passage of nearly two inches in length. The entire track was incised and *thoroughly painted, throughout its entire extent, with perchloride of iron*, for the double purpose of controlling hæmorrhage, and slightly cauterizing the surfaces, so as to prevent quick union between the lips of the wound. A mass of firmly clotted blood filled up completely the interstice. Twenty-four hours after the application suppuration had already commenced, detaching the coagula, which were before firmly adherent to the wound; granulations formed over the entire surface, and consolidation from the bottom was rapidly effected without the patient having been detained a single day in his chamber.

The daily plugging of the wound, which is so very painful as to make the patient shun the visits of the surgeon; the doubts of retaining the plug within the wound, and the confinement necessary when this treatment is carried out, are all obviated by the much simpler, safe, and more efficient method of painting with the perchloride or persulphate of iron. The tent is a relic of a former age, which should be discarded from the treatment of this surgical lesion.

ART. 117.—*On the treatment of Prolapsus of the Rectum by hypodermic injection of Strychnia.* By M. FOUCHER.

(*Rév. de Thér.* and *Journ. de Méd. et Chir. Pratique*, Aug., 1860.)

CASE.—A little girl, æt. 4 years, an inmate of the Foundling Hospital at Paris (where M. Foucher was in attendance in place of M. Giraldès), who had been subject for several months to prolapsus of the mucous membrane of the rectum. The procidence returned after every motion, and if more than a quarter of an hour was suffered to elapse before it was reduced, the mucous membrane pressed by the sphincter became turgid, assumed a crimson hue, and could not be returned into the intestine but by violent effort, and with much pain. M. Foucher inserted, agreeably to Wood's method, the canula of one of Pravaz's syringes in the direction of the sphincter, at about one third of an inch beyond the anus; he then injected ten drops of a solution containing three grains of sulphate of strychnia in five drachms of distilled water. In the course of the day, the child felt no uncommon sensation. She ate and played as usual; and in three motions, the mucous membrane extruded but once. On the following day no prolapsus occurred; and on the third day, the procidence took place once only. Twenty-four hours later, M. Foucher again injected fourteeen drops of the solution of sulphate of strychnia, and from that time, during the six weeks the child remained in the ward, the symptom did not recur. Later, under the influence of chicken-pox, the prolapsus reappeared, but from the time the cruptive affection subsided, no

further procidence was observed, and after three months' supervision, the little patient was sent into the country, no apprehension of a return of the infirmity being entertained.

Art. 118.—*Case of Spina Bifida successfully treated by Iodine Injections.* By Dr. Brainard.

(*Chicago Medical Journal*, Aug., 1860.)

This is the sixth case in which Dr. Brainard has practised this mode of treatment—with what result in the other five cases is not stated.

Case.—June 6th, 1860, a female child from Michigan was presented to me for treatment. It was eight months old, well formed and healthy in every respect excepting a tumour situated over the upper part of the sacrum. This tumour measured six inches in circumference around the base, eight inches around its largest part, and was elevated two inches above the surrounding skin. Its surface was irregular, resembling that of a tomato, a piece of the colon when inflated. It was translucent, elastic at points, and at others the walls were firm like the tissue of cicatrix. A great portion of its contents could be pressed into the spinal column without giving rise to any other inconvenience than making the child cry.

6th. Present Dr. Haydock.—I passed an exploring trocar into the sac, through a part of the covering, which was thick, and drew off about one ounce of fluid. I then had the neck of the sac pressed on each side, and injected through the canula a solution containing the five eighths of a grain of iodine, and one and a half grain of iodide potass, in a drachm of distilled water, intending to let it flow back through the canula. This, however, it would not do, and I injected two drachms of distilled water, which was allowed to remain. The child, during the operation, was kept under the influence of chloroform. The operation was done at 6 o'clock p.m.

8 o'clock.—Skin hot; child starts in sleep as if frightened; takes the breast.

7th, 8 o'clock, a.m.—Has not slept well; has perspired freely; taken the breast; tumour flaccid.

6 p.m.—Seems perfectly well; tumour tense and redder than before the operation.

8th, 12 m.—Child seems perfectly well; urinates more than natural; tumour tense and red; child laid on the face and side.

9th.—Tumour red and firm; child perfectly well.

10th.—Tumour flaccid and pale; applied bands of gum elastic around it.

14th.—Tumour much reduced. Introduced into a point where the skin is thick and sound, a common hydrocele trocar, and drew off about two drachms of serum tinged with blood from wounding the internal membrane; washed out the cavity with distilled water, and injected the solution used before, as much as could be pressed in, then washed it out with distilled water and applied isinglass plaster.

During the operation a tape was tied tightly around the base of the tumour so as to cut off the connexion with the spinal canal, and the child kept under the influence of chloroform.

The operation seemed at first to produce no sensible effect. About an hour afterwards the child had coldness of the feet and hands. This was followed by some reaction, and this by sweating. The next day there

was some redness and fulness of the tumour, which had entirely lost its elasticity.

The patient was seen by Drs. Powell and Paoli.

For three days the tumour was tense, firm, and red. After that time it became pale and flaccid.

25th.—Applied pressure by a gum-elastic band around the body, and a band of the same material around the tumour. While this remained it was reduced to about one third its former size.

30th.—The tumour is pale, wrinkled, firm, not fluctuating; appears quite solid. Pressure continued by a strip of adhesive plaster passed circularly around it, and the gum-elastic band made for a hernia truss passed around the pelvis, so as to exercise compression upon it.

July 6th.—Tumour forms only an innodular mass diminishing in size. The patient was allowed to return home, with directions to continue the compression as long as might be necessary to efface the walls of the sac.

"In any similar case," Professor Brainard says, "I should desire: 1st, to tap the sac and draw off the serum; 2d, to make compression so as to prevent the iodine from entering the spinal canal; 3d, inject a solution of iodine, of the strength of five grains, and thrice that quantity of iodide of potash to the fluid ounce of distilled water; 4th, withdraw the injection, wash out the sac with distilled water; 5th, re-inject the serum, or fill the sac with distilled water. The puncture should be carefully closed after withdrawing the canula.

"When the tumour is not pediculated, so that the solution may be prevented entering the spine, then the rules I gave in the article referred to, seem to me judicious.

"In the case herein reported, no symptoms were produced except those of an overdose of the solution, diaphoresis and diuresis; and except for the difficulty of getting rid of the firm walls of the tumour after the sac was obliterated, the case was not more difficult to treat than a hydrocele."

ART. 119.—*Recovery after complete Transfixion of the Abdomen by a Bayonet.* By Mr. R. COOPER TODD, Surgeon to the 99th Regiment.

(*Medical Times and Gazette*, March 30, 1861.)

CASE.—The following recovery from a wound caused by a bayonet, which passed through the abdomen of a soldier in my regiment during the last China war, may prove interesting to some of your readers:

Private John C—, æt. 25, a healthy and vigorous man, joined the 99th Regiment, as a volunteer for the China war on January 17, 1860. He had served with the 53d Foot during the Indian mutiny. He generally enjoyed good health, and had escaped without a wound. On August 10 following he landed at Peh Tang with the 99th Regiment, and was appointed to the Provost Marshal's staff, as one of the camp police. In this capacity he accompanied his regiment and division on the march to Tien-tsin until September 3d, where he was unfortunately wounded by his own bayonet.

On the morning of September 3d, the division had marched for upwards of seven hours through a barren and dusty country. The morning sun was very powerful, and the march distressing to the soldier. The number of natives who flocked into camp with eggs, fowls, vegetables, and other saleables were so numerous, that C—'s police duties became more onerous after his long march than when upon the road. To facilitate his work he was, therefore,

allowed to get a pony from the Commissariat department. This brute proved to be refractory and unwilling to go any way but the one most agreeable to himself. In the struggle with his rider he got among the heel-ropes of the other animals and fell. C— was thrown. His bayonet fell out of its scabbard, and the unfortunate soldier fell on the top of the weapon, which passed directly through the abdomen. It entered the back, about two inches to the left of the last dorsal vertebra, and reappeared about two and a half inches to the left, and below the umbilicus.

The weapon passed first through a fold in the man's tunic, and thus perforated the back of this garment in three places. It then entered the band of his trousers, the back of his shirt, the posterior and anterior walls of the abdomen, the front of the shirt, and reappeared over the band of the front of his trousers. The point protruded about two inches anteriorly. There were three holes posteriorly in the tunic, one in the trowsers, and two, one posterior and the other anterior, in the shirt, and two of course in the abdominal parietes.

A medical officer belonging to the Military Train, Dr. Sainter, happened to be present, and the bayonet was immediately withdrawn. In a very few minutes, certainly not more than three or four, I saw him. He was then perfectly calm and collected, and did not complain of pain. He expressed his belief in the hopelessness of his case, but at the same time exhibited an amount of deliberate courage highly inspiriting to his medical attendant. Pieces of wet lint were applied to each wound, and a single strip of a bandage tied round the abdomen to keep the lint in its place. He was then removed to the hospital tent, 99th Regiment, and sixty drops of laudanum in some weak brandy and water administered, and repeated in about four hours afterwards. On the following morning he complained of sickness of stomach, and inability to micturate. A little arrowroot and brandy administered was instantly vomited. The laudanum was again given, and perfect rest, as far as possible, enjoined. This, of course, on the line of march was impracticable, as the patient had to be carried in his dhooly with the army. It, however, so happened that very heavy rains fell during all that early morning, so that the division, instead of moving about 3·30 a.m., did not get away until after 11 a.m. This fortunately gave C— seven hours' more rest than he otherwise would have had. However, he had a very fatiguing day's march. He was carried from 11 a.m. until after 5 p.m., when we again halted for the night. He bore the journey well; arrowroot and brandy and water had been administered during the march, and the irritability of the stomach was greatly allayed. The bladder, however, had not acted. He did not feel any desire to make water, but the bladder presented all the evidences of being full. A catheter was passed, and a large quantity of urine evacuated, which, however, appeared healthy and totally free from traces of blood. He had no pain. His tongue was normal, and pulse about 62. The bowels had not acted since the accident.

On the next morning the division again advanced. We left at four o'clock. C—, previous to leaving, got a cup of arrowroot and brandy. About nine a.m. we halted (in consequence of some want of arrangements relative to our encamping ground) on the road leading to Tien-tsin. The sun was extremely powerful, and C— suffered much from the heat. Even the healthy officers and men suffered from the heat during that tedious halt, and during that time it was considered advisable to let C— have more than one draught of brandy and water. It was two o'clock before the tents were pitched, and the patient made comfortable. Here ice was plentiful, and grapes and eggs were in abundance. Iced water was applied to the abdomen, and the patient was allowed to use grapes and the beat-up yolk of an egg. Here the

bladder recovered its tone, but the bowels did not act. A lukewarm water enema was administered, and a little feculent matter washed away. Still the bowels remained confined. The next day was a day of rest. A tablespoonful of castor-oil was given in the beat-up yolk of an egg, and in a few hours the bowels were very favorably acted upon twice. Neither evacuation caused pain, or presented any trace of blood. From that time he gradually recovered without an untoward symptom.

On September 8 (the accident, it will be remembered, occurred on the 3d), my regiment advanced through Tien-tsin towards Pekin. It became, therefore, necessary to transfer the patient to the care of Dr. Little, Royal Marines, which corps occupied the adjacent lines. When the Marines were ordered forward, he was transferred to the General Hospital, Tien-tsin. I saw him on the 28th of October, on my return to Pekin. A small scab, which contained some pus, covered the hole where the bayonet had entered. The wound formed by the exit of the bayonet was quite well, leaving a triangular cicatrix. He was pale, but in good spirits. His digestion was good; his tongue clean; pulse 62; his bladder acted perfectly.

He complained to me of "a drag in his belly" when he straightened himself up, and a pain across the loin when he stooped. He also stated that he felt this "drag in the belly" when the bowels were costive, but that "generally his bowels were rather free." In other respects he was quite well.

In this case it must be clear to everybody that the bayonet passed through the abdomen without injuring the intestines or any other important part. If the ureter or intestine had been injured, some traces of blood would have existed in the urine or motions. If any vessel had been wounded, syncope would probably have occurred, or at least some evidence of loss of blood. Such was not the case. The bayonet, in my opinion, injured nothing excepting the peritoneum and the parietes of the abdomen. The point of a bayonet is not particularly sharp; it is rather rounded, and inclined backwards. The intestines were probably empty. With the exception of a cup of tea, and perhaps some grapes and a bit of biscuit, C—, in all probability, had eaten nothing since six o'clock on the previous evening. The resistance to the bayonet by the intestines was therefore slight. They slipped away from before its point, and thus escaped perforation.

In like cases, I have no doubt but that many medical officers would have been inclined to try and "prevent peritonitis" by "active treatment," as it is called. The patient would have been bled and put under the influence of mercury. This case, to my mind, proves that such treatment was not necessary, and I believe would have proved injurious, because it would have weakened the patient, and thus impaired that indomitable courage to which I believe he in a great measure owes his wonderful recovery.

ART. 120.—*Case of Rupture of the Rectus Abdominis Muscle.* By M. LEGOUEST.

(*Gaz. des Hôpitaux*, No. 76, 1860.)

Cases of rupture of the rectus are rare, so that M. Nélaton only found it occurring in four instances out of forty-nine cases of rupture of muscle. A case related by Boyer is especially interesting as it was completed by an autopsy. A young man complained of pain in the abdomen during vomiting, and after death the two ends of the ruptured muscle were found separated from each other to the extent

of an inch by effused blood, the rupture taking place at the tendinous interstice situated opposite the umbilicus and the first lower intersection. The subject of the present case was a soldier, aged 27, of good muscular development, who, a week before, while performing some gymnastic exercise, was attacked with severe pain in the abdomen, which increasing and being accompanied by swelling, he came to the Val de Grâce. At three centimètres above the pubis, a hard, well-defined tumour was observed, which was not increased in size on coughing, and exactly followed the course of the right rectus; increasing in breadth towards the umbilicus from two and a half to four centimètres. After four days' rest it had diminished one half in size, not then being more than three fingers in breadth, and in three days later only a slight hardness remained. The case thus terminated very well; but it might have been otherwise, for the epigastric artery at about midway between the umbilicus and pubis enters the substance of the right rectus, giving it branches. These or the trunk itself might become ruptured by the effort which caused a healthy muscle to yield, and thus give rise to a diffused aneurism. This would the more be to be feared as the muscle is here only covered posteriorly by loose cellular tissue and peritoneum. All authors speak of only a small quantity of blood being effused, but in this case the tumour reached from the umbilicus to within three centimètres of the pubis. It is therefore probable that some small arterial branches were divided, and that the arrest of the bleeding was due not only to the retraction of their ends, but to the compression exerted by the effused blood itself. The only thing to be feared, then, was the purulent transformation of the coagulum; but rest, regimen, cold applications, and the good constitution of the patient averted this mischief.

(c) CONCERNING THE UPPER EXTREMITIES.

ART. 121.—*New method of treating long-standing Dislocations of the Scapulo-clavicular Articulation.* By Dr. E. S. COOPER, Professor of Anatomy and Surgery in the University of the Pacific.

(*American Quarterly Journal of Med. Science*, April, 1861.)

The plan of treatment proposed by Dr. Cooper aims at securing a bony union between the end of the clavicle and the acromion process of the scapula—a plan which remedies the deformity always resulting from this awkward accident, at a price which may be paid with little inconvenience, for the movements at this articulation are so slight that they will scarcely be missed when they are lost. Dr. Cooper refers to two other cases besides that which we extract, in which the operation, treatment, and result were precisely the same.

CASE.—Mrs. M. A—, a native of Wales, æt. 36, mother of several children, consulted me, in 1856, for a dislocation of the acromial extremity of the left clavicle of several years' standing, which had impaired the usefulness of the left arm of that side to a very great extent. She had consulted several surgeons in Wales, one of whom used compression upon the elevated extremity

of the clavicle for some months without avail. Two years afterwards she consulted some of the most eminent surgeons of London, but without receiving any permanent benefit, though she wore an apparatus recommended by one of them for several months. Subsequently coming to the United States, she consulted different surgeons, none of whom, however, advised any effort to be made to remove the deformity.

She had a nervous desire to get rid of the deformity, amounting almost to insanity, and entreated me to do something for her. I proposed cutting down upon the bones, drilling them, and applying ligatures of metal to hold them together. To my surprise she accepted the proposition, not only with promptitude, but apparent enthusiasm. All the *supposed* danger of admitting air to bones was fully portrayed to her, as founded upon the authority of the greatest practitioners for hundreds of years, but all had no effect. Her husband and herself would take all responsibility, she said, bearing in mind an operation which had been performed upon her nephew, where metallic ligatures were applied to the tibia, and to which the husband consented.

Although from my experience with ligatures applied to bones I confidently calculated upon success in the case, it was desirable to have the parties fully informed as to what others would say should any untoward result follow, against which we cannot safely guarantee in any operation, however simple, and which is liable to fall particularly heavy upon the surgeon who performs an experimental operation upon principles opposed to the opinions of the profession.

Operation—The operation was commenced by making an incision three inches long, commencing a little external to the border of the acromion process of the scapula, and following the direction of the clavicle. A transverse incision of two inches was next made, passing over the elevated extremity of the clavicle. The flaps were then dissected away, the bones exposed, their articulating faces trimmed with the bone-scissors, and then bored with a drill one line and a half in diameter, about half an inch from the articulating surfaces. The drill was passed through obliquely from above in either bone, the end of the drill being directed towards the opposite one. A wire, one line in thickness, made of virgin silver, was then introduced, and a firm knot formed by twisting the ends together immediately over the articulation. Two healthy bony surfaces being brought together and held firmly there, I calculated most confidently upon a speedy osseous union, which turned out to be the case.

Considerable difficulty was encountered in passing the wire from one bone to the other. By having the end well sharpened, however, and bent, after several trials it was passed through the holes in the bones.

After-treatment.—The after-treatment consisted of applying a piece of lint wet with an evaporating lotion (composed of one part of alcohol and ten of water) in the wound around the ends of the wire, which were then bent down over the margin of the wound, over which was placed a piece of wet lint. A roller was then applied over the arm and shoulder of that side as tightly as the patient could conveniently bear. The dressings about the wound were kept constantly wet with the evaporating lotion for four days, when they were removed and a poultice applied, after which the wound granulated kindly, and without an untoward symptom the patient recovered perfectly, without deformity.

At the end of six weeks the wires were untwisted, one end cut off by passing the bone scissors down to the side of it nearly by the bone, when the other end was readily withdrawn.

As soon as the wound began to suppurate freely, a movement of the wire was commenced by carrying the ends back and forth. This was done for the double purpose of keeping the wound slightly open for the discharge of any spiculæ of bone which might be thrown off, and which not unfrequently occurs in all operations upon the bones, and for facilitating the final removal of the wires.

The motion of the arm is as good as ever, and at the end of nearly three years there is no indication of a return of the deformity.

Art. 122.—*On the diagnosis of Dislocations of the Shoulder.* By M. Maisonneuve.

(*Moniteur des Sciences Médicales*, No. 122, 1861 ; and *Med.-Chir. Rev.*, Jan., 1861.)

It very often happens, M. Maisonneuve observed in a recent clinical lecture, that even experienced surgeons may hesitate respecting the existence of a luxation of the shoulder; and you are aware of the learned dissertations to which the differential diagnosis of these luxations, fractures of the neck of the humerus, and even simple contusion, has given rise to. Numerous are the pages, even in the most recent works, devoted to this important discussion; and certainly, after reading and meditating upon them, one can but be persuaded that this diagnosis is one of the most delicate and difficult in surgery. This does not arise from the enumeration of the characteristic symptoms of each lesion being incomplete. Far from it; for real and doubtful symptoms, vague and precise symptoms, are so accumulated that even the most skilful can scarcely make them out, while the simple practitioner is utterly at a loss. Still there is a simple and easily discovered symptom which will always enable you to recognise with certainty not only this but any other dislocation, whatever swelling of the surrounding soft parts may exist. This symptom is based upon the fact that *in all dislocations the normal movements are impeded or abolished*, while in simple contusion these movements persist, and in fractures others of an unusual nature are added to them. Take hold of the arm, and endeavour to make it execute the movements proper to the articulation. If these are found to be impossible, or very limited, there is without doubt dislocation; while if these remain intact, no luxation exists, and the presence or absence of shortening and crepitation will determine whether the accident is a fracture or a mere contusion. This sign alone will enable the diagnosis of the dislocation to be made. The study of the symptoms may be carried further, and analysed in detail. We may verify the flattening and the depressibility of the shoulder, the projection of the head of the humerus, the elongation of the limb, and the various circumstances which determine the variety of the dislocation. But the mere fact of the abolition of the movements of the joint had already placed the fact of the dislocation beyond all doubt.

(D) CONCERNING THE LOWER EXTREMITY.

ART. 123.—*On Dislocation of the Head of the Femur into the Obturator Foramen, with preservation of the movements of the bone.* By M. SÉDILLOT, of Strasburg.

(*Journal of Pract. Med. and Surgery*, March, 1861.)

A highly interesting paper was forwarded to the Academy of Sciences, by Professor Sédillot, on the subject of the immediate preservation of the movements of the inferior extremity in cases of accidental displacement of the head of the femur into the obturator or thyroid foramen. The difficulty or absolute impossibility of the movements of the limb has invariably been considered as the most constant symptom of recent dislocations, especially in diarthrodial joints. It seems indeed difficult to imagine how a bone extruded by some violent effort from its articular cavity, an injury necessarily involving laceration of the ligaments, muscular tension, and changes in the natural position and direction of the limb, can possibly still allow of motion, so painless and extensive as not to interfere materially with the functions of the extremity. Surgeons, therefore, have neither surmised nor admitted that a patient, suffering from dislocation, may uninterruptedly pursue his usual avocations as if he had merely undergone some slight contusion. Instances of the kind exist, however, and are deserving of notice, inasmuch as they may induce a dangerous degree of security, and lead to disastrous errors of diagnosis.

This is the object of M. Sédillot's paper, and, in support of his views, the author adduces several cases of luxation of the femur forward and downward, in which the patients were nevertheless able to walk immediately after the occurrence of the accident, and to exercise as usual, without much pain or lameness. It is, moreover, for the purpose of cautioning the practitioner against an error which might readily be fallen into in such cases, that M. Sédillot enlarges on these circumstances which have not hitherto been pointed out. When the attention of the observer is led astray by the absence of any marked difficulty of locomotion, the gravity of the injury may easily escape detection, and a minute examination of the relative changes of situation of the pelvis and femur may appear unnecessary in consequence of the apparent unimportance of the symptoms. The persistency of the movements and functions of the limb, says M. Sédillot, is accounted for by the fulcrum afforded to the head of the femur by the depth and shape of the margin of the obturator foramen. Despite the immediate and spontaneous restoration of the power of using the extremity for the purposes of progression, the leading features of the displacement are nevertheless perfectly discernible, as may be seen in the instance of a young soldier who was admitted into the hospital of Strasburg for a lameness of obscure origin, which had even been suspected of being simulated. M. Sédillot relates the case as follows:

CASE.—G. P—, æt. 18, a private in the 4th Rifles, fell, while in a boat, on the 6th of October, 1860, but was unable to give any account of the circum-

stances which accompanied his fall. The patient continued to walk, but observed, three days after the accident, that his right leg and thigh were slightly turned out, so as to induce a certain amount of lameness.

He was admitted into hospital on the 22d October, 1860, when his condition is described as follows:

1. The right thigh and leg were slightly everted.

2. The anterior and superior spine of the ilium was found to be three lines lower than the same process on the opposite side.

3. The lateral breadth of the hips from the mesial line running along the trochanter major was seven inches on the left side, and six only on the right.

4. The distance from the mesial line of the body to the summit of the trochanter was seven inches and three lines on the left side, and ten inches on the right. (The lowering of the right side of the pelvis and the elongation of the limb must here be recollected.)

5. From the anterior and superior spine of the ilium to the summit of the patella, seventeen inches on the left side, and eighteen inches and a half on the right.

6. The circumference of the upper part of both thighs was the same, viz., eighteen inches and three quarters.

7. Marked flattening of the right, and prominence of the left, trochanter.

8. The apparent elongation of the right leg was twenty-two lines.

9. In walking the right leg and thigh were turned outwards.

10. The right trochanter appeared to have sunk in; the furrow below the right buttock was lowered.

11. Abduction of the limb was perfectly unobstructed. But the right thigh could be brought into a line with the axis of the body when only the foot was everted.

12. The right foot could by no effort be turned inward,

13. In abduction the right thigh could be bent, but not in adduction.

14. The movements of adduction, and especially of abduction of the left leg, were singularly extensive.

Reduction.—The patient, who had taken chloroform, was laid horizontally on the uninjured side, and, for the purposes of extension, a sheet folded lengthwise was passed under the perineum, and its two ends, carried one in front and the other at the back of the pelvis, were twisted and secured; coaptation and counter-extension were performed by bending the leg and thigh, imparting a rotatory motion to the head of the bone, and finally by bringing it into adduction and rotation inwards; reduction was thus effected twenty days after the accident.

The natural shape and dimensions of the limb were entirely restored.

For six days the patient remained in bed, the right limb secured in extension and adduction, and attached to the left by a roller above the knees and malleoli.

P— was allowed to rise on the seventh day. He perceived no lameness, and three weeks after he left the hospital to join his regiment.

M. Sédillot's cases tend to show that the displacement of the head of the femur into the obturator foramen, when the movements are preserved, is characterised by an elongation of the limb of from five to fifteen lines, a symptom which is rendered more evident by the lowering of the hip-joint on the diseased side; the outward rotation of the extremity and the abduction of the foot; the prominence formed by the head of the bone in the vicinity of the pubes, and the depression existing in the spot it should naturally occupy; the impos-

sibility of bending the thigh in adduction, and the ease with which this is accomplished when the limb is in abduction. Reduction is seldom difficult, even when the dislocation is of several weeks' standing, and is effected by traction outward of the upper part of the thigh, the knee being turned inward and forward, and placed in adduction when the head of the bone is supposed to be on a level with the acetabulum. In order to obviate a relapse, the only precaution necessary is to keep the injured extremity extended and turned slightly inward. The cure is rapid and complete. When the parts have not been replaced in their proper position, the bones adapt themselves to each other, and the patients are frequently enabled to use the limb, remaining, however, affected with permanent lameness.

ART. 124.—*On the curability of Intracapsular Fracture of the Neck of the Femur.* By Dr. FRED. J. BROWN, of Rochester.

(*British Med. Journal*, April 20, 1861.)

Dr. Brown relates five cases, occurring in his brother's practice and his own, in which Dupuytren's treatment, by the long splint, continued for 100 to 140 days, produced very satisfactory results, and he concludes his paper with these propositions:

1. That treatment by easy posture with pillows is disastrous in its results, not being better than entire absence of treatment.
2. That œdema and pain of the limb continue for life in untreated cases.
3. That treatment by extension by the long splint for 100 to 140 days is perfectly successful in obtaining firmness at the seat of fracture and a useful limb.
4. That similar treatment, if deferred for the first few weeks, will give a limp in the walk of the patient for its result.

The cases are as follows:

CASE 1.—Mr. M—, sexton, æt. 68, was thrown down in the street by a butcher's horse. The left femur was broken at its neck. This occurred on the 14th January, 1858. The limb was useless, but not distorted. Crepitus was felt in the groin when the heel was lifted.

The long splint was applied, and kept on for fifty-one days. A casing of plaster was then substituted for the splint. The recumbent posture was maintained for 106 days. Union of the fragments was obtained, and the patient recovered perfectly. He had congestion of the head during the treatment, which required careful management by leeching and medicines throughout the entire period.

CASE 2.—Mrs. W—, æt. 51, the wife of a water-carrier, was knocked down in the street by her husband whilst he was intoxicated, on the 27th August, 1858. The right femur was broken at its neck. The limb was elongated half an inch, and the toes were slightly everted. The injury resembled a case of dislocation into the foramen ovale; but there was perfect movability. Crepitus at the groin could be felt.

The long splint was applied, and retained for seven weeks, when the hip was encased with plaster and the straight position kept up for some weeks longer. The cure was perfect.

Case 3.—Mr. C—, æt. 69, gardener, fell upon his side on the 3d December, 1858. The left femur was broken at its neck. Crepitus at the groin was felt; there was no distortion. The long splint was retained for fifteen weeks. Perfect recovery took place.

Case 4.—Mr. S—. æt. 68, broke the neck of the femur on one side (I have omitted to note which), on the 17th January, 1859. The long splint was applied; but it was removed, and all treatment abandoned, within a fortnight, in consequence of the opposition of the patient and his friends. The man is bedridden now, showing that nature is unequal to the cure of this injury.

Case 5.—Mrs. R—, æt. 75, fell down stairs on the 9th April, 1859. She broke the left femur as its neck. The long splint was applied and retained for ninety-six days. The recovery was perfect.

Case 6.—Mrs. W—, æt. nearly 76, was pushed down in the street, on the 1st June, 1859. The right femur was broken at its neck. I applied the long splint next day; but I removed it from the limb and discharged the patient in less than a week, in consequence of the insubordinate conduct of the patient. I was sent for in four weeks' time, and I found the woman suffering greatly from pains in the limb. There was œdema from the foot to the hip. I reapplied the splint on the 4th July, and retained it until the 23d September, when I removed it. The fractured part was firm, allowing of no motion when the limb was raised by the heel. The patient was cured at the end of 115 days, but the extension was kept up continuously for the last eighty-two days only. There was slight œdema of the limb remaining, but there was no pain. This woman was able to walk with a stick in the course of a few weeks. I saw her a few days ago; the limb is useful, but there is a limp in her walk.

Case 7.—Treatment was attempted in a case of one year's duration as follows:—Mrs. O—, æt. upwards of 60, had been bedridden for twelve months, when the long splint was applied on the 13th January, 1859. No medical treatment had been used in this case, for the patient had not sought for advice. The limb was œdematous and extremely painful. The long splint was removed on the day after its application, in consequence of the refusal of the woman to endure restraint.

Art. 125.—*A new mode of Tying the Femoral Artery.*

By Dr. George H. Porter, Surgeon to the Meath Hospital.

(*Dublin Quart. Journ. of Med. Science*, Nov., 1860.)

Many years ago the father of the author suggested to several of his professional friends the adoption of an operation for the cure of popliteal aneurism, that appeared to be novel both in its mode of performance and the plan selected. Whilst engaged in investigating the pathology of this disease generally, he thought he had established the following facts:—First, that if a ligature is applied on an artery in any situation or part of its course, there is little or no danger of gangrene attacking the limb beyond it, the collateral circulation being always sufficient to support its vitality; but that, when mortification did happen, the occasional occurrence of which he was by no means prepared to deny, it was usually occasioned by the size of the tumour, or other cause obstructing the return of the venous blood, and, therefore (as he was wont to express it), there was more danger from the

limb containing too much blood than too little. The very frequent and very successful ligature of the external iliac showed there was nothing compulsory in the selection of a part of the femoral beyond the profunda, in order to the limb being nourished, and that any other part of the trunk of the vessel might be selected with equal safety. Secondly, he had proved, at least to his own satisfaction, that the usually accepted local causes of secondary hemorrhage had really but slight influence: that it was of little importance whether the artery was extensively disturbed and separated from its natural connexions or not; or whether it was tied close to or at a distance from a collateral branch, provided such branch was at the cardiac side of the ligature, or whether the loop was tightly or loosely closed, or even whether the vessel was studded with specks of earthy senile degeneration, for he had witnessed and himself performed operations that were successful in despite of all these obstacles. He believed that hæmorrhage arose more from constitutional than local causes; he used to state in his lectures that he had never seen an instance of it in a private family, or in a house where due attention was paid to cleanliness and ventilation; that in some hospitals it was scarcely known, whilst in others it occurred with a harassing and perplexing frequency; and he showed that the inflammation which preceded and led to the hæmorrhage was of the erysipelatous character, tending to ulceration, whilst that leading to obliteration of the vessel was adhesive. He professed, therefore, to feel but little apprehension of this formidable occurrence where the patient could be placed under satisfactory hygienic influences, and always, and in every instance, advised that no operation should be undertaken on any other conditions. But, thirdly, he regarded a wound or injury of the vein a source of great and often unavoidable danger in the operation as usually performed, and held the principle that no proceeding could be considered as safe and eligible when such risk was incurred. Actuated by these considerations, he proposed that the usual place selected for securing the femoral artery should be abandoned, and another chosen, which should at least be free from the last-named formidable objection.

After the artery has passed under Poupart's ligament, it lies quite superficial for nearly an inch of its course, accompanied by its vein, which is to its internal side, and just as superficial, and on a level with it. Any incision, therefore, by which this latter vessel could be endangered, must so far expose it to view as to render its avoidance easy, and any operation performed on this portion of the artery must be free from the objection above stated. Indeed, it is difficult to conceive how the vein could be injured, unless by the most absurd and culpable recklessness. But in this part of its course it gives off numerous branches, and the vicinity of any one, even of the smallest of these, would interfere with the formation of an internal coagulum, and with the subsequent process that ought to lead to the obliteration of the vessel. True, it does give off these branches immediately while passing under Poupart's ligament, or shortly afterwards; it gives off the circumflex ilii and epigastric, two large and important branches, quite sufficient to mar any operation, if this objection were really effective; but these branches would be above, or at the cardiac

side of the ligature, and experience proves that secondary hæmorrhage does not take place in such situation. Moreover, there seems no reason for supposing that these branches would be more injurious in the case of a ligature placed below them, than would be the profunda in the old operation, which was always left above the cord in order to preserve the circulation of the limb. Lastly, the common carotid artery had been tied within a quarter of an inch of the bifurcation at the arteria innominata and the subclavian at the edge of the scalenus muscle; and, assuredly, if the presence of a large branch at or near the cardiac side of a ligature would prevent the obliteration of the vessel, such operations as these could scarcely have proved successful. But the femoral artery gives off, lower down, certain small and irregular branches—the external or superficial pudic, for instance—some of which must be below, or at the distal side of the ligature, the very situation where hæmorrhage occurs, and where the presence of one ever so small may thus prove destructive. It may be so, but it has never been proved. On the contrary, where secondary bleeding has happened, the cause has always been in the ulceration of the artery at the ligature, and this, whether there was a collateral branch in the vicinity or not. There has been no lymph, no adhesive inflammation, no attempt at occlusion, although the space of an inch might intervene between the cord and the nearest branch, whereas in the many operations that have been successfully performed it seems impossible that all must have been so fortunately circumstanced as that not one should have had even a small or trivial collateral twig in the vicinity of the ligature at its distal side.

Supported by these considerations, it was suggested that the artery might be deligated safely and successfully at a point about half an inch below Poupart's ligament, where it lies superficial, where neither vein nor nerve could be exposed to danger, and where the collateral branches would be at a sufficient distance not to interfere with the subsequent process of obliteration, if such was really effective; and it also proposed that the operation should be performed by a single incision parallel to Poupart's ligament, and of course transverse to the vessel, such incision giving the least disturbance to the artery in separating it from its adjacent connexions, and affording equal, if not greater, facilities for passing the cord around it, and placing the wound in the most favorable position for healing subsequently. All that was required to insure success was, that the patient should be prepared for the operation for a few days by confinement to bed, a moderate diet, and gentle aperient medicine; that he should be kept during the whole progress of the cure in a pure and wholesome atmosphere; and that, until the perfect cicatrization of the wound, he should observe the most absolute and perfect quietude. The importance of this latter condition will be made very apparent hereafter. At the time, however, these suggestions met with small encouragement. Few surgeons agreed in the pathology of the arterial system, and fewer still could be found willing to leave the beaten track, and adventure their own reputation and their patient's life on an operation wanting the sanction of experience. In the meantime, a case of popliteal aneurism was cured in the Richmond Hospital by mediate

compression; another occurred in Jervis-street Hospital, and soon this method of treatment came to be ratified and confirmed by a course of success so unvarying and continued, that most surgeons began to regard the operation of securing the femoral artery as little more than a matter of bygone history, never more to be resorted to in the treatment of popliteal aneurism.

Mr. Porter gives in detail the first case in which the operation was performed by the late Mr. Porter, and also two recent cases, one by himself, and the other by his colleague, Mr. Smyly, both of which were perfectly successful. He then proceeds to say:

"I confess that the point of interest which has induced me to publish these cases, and to which I wish to direct the attention of the profession, has reference to the question of secondary hæmorrhage, that object of terror to all operators, and which has really proved such an obstacle to success. All surgeons of the present day believe that the vicinity of a collateral branch (however small) to the ligature, vitiates the process of union by preventing the effusion of agglutinative lymph; and, as far as I know, this is the only objection that can be raised to the principle of those operations I have just detailed. Mr. Erichsen, when treating of tying the femoral artery between the inferior edge of Poupart's ligament and the origin of the profunda, says:—'Of twelve recorded cases, in which this artery has been tied, it would appear that three only succeeded, whilst in the remaining nine instances secondary hæmorrhage occurred, which proved fatal in three, and in six was arrested by the ligature of the external iliac. This operation, I think, therefore, ought to be banished from surgery; and in all those cases of aneurism that are situated above the middle of the thigh, and in which sufficient space does not intervene between the giving off of the profunda and the upper part of the sac, for the application of a ligature to the superficial femoral, the external iliac should be tied, unless compression can be employed.'

"Certainly it requires no little confidence to question a doctrine thus authoritatively advanced, and universally received. But I must remind my readers, that up to this moment the operation on the femoral artery in this locality has always been exceptional, never adopted through choice—never resorted to unless when some strong objection existed to the selection of Scarpa's space, which objection may be admitted as adverse, more or less, to the success of any operative proceeding. And in the cases alluded to by Mr. Erichsen, as far as I have been able to analyse them, this remark is fully borne out. Again, in the recorded cases of hæmorrhage, I do not find any one instance proved to have been occasioned by the vicinity of a collateral branch; such vicinity may have existed, and probably did, but its injurious influence has in no case been demonstrated. As far as I know, destructive consecutive hæmorrhage is always accompanied by the presence of unhealthy, ulcerative inflammation and the absence of lymph; but I am not aware that these results have been traced to the presence of a collateral branch. It is very true, that when such branch exists, there will be no coagulum of blood within the vessel. Its absence may have originated the idea that the cause which prevented its formation also prevented the deposition of coagulating

lymph, but certainly the two results can have no connexion; and that they have not is, I think, fully proved by the cases just related. There can be no question that two large collateral branches lay closely above the ligature, and that a layer of lymph was formed nevertheless. This lymph was so thin that the pulsation of the trunk of the vessel could be felt into the very wound, and so weak that it yielded and broke under the excitement of a violent cough, and permitted the escape of a considerable quantity of blood. This took place in both instances, but the lymph was adhesive and healthy, the bleeding easily controlled by slight pressure, and perfect recoveries the result. So long back as the year 1813, Mr. Travers noticed that 'secondary hæmorrhage sometimes results from the laceration of the young and tender cicatrix;' but says he, 'this is not to be classed amongst its natural causes.' Now, if this can happen at the cardiac side of the ligature, when the young and tender cicatrix has to meet and stem the full stream of blood under the strong power of the heart's action, why may not the same happen at the distal side, or why should a collateral branch have an influence in one situation which it clearly does not possess in the other? The answer probably is, that the cause of the hæmorrhage is not in the presence of the collateral branch, but in the kind of inflammation set up in the vessel; it is plastic, where it is to be obliterated; it is erysipelatous and ulcerative, where it bleeds. I am quite aware how little reliance can be placed on experiments on the lower animals for the elucidation of human pathology, and especially with regard to the arterial system; nevertheless, there is one circumstance that seems to bear strongly on this point under consideration. I do not believe it possible to produce secondary hæmorrhage in the inferior animal. We may ligature what vessel we please, and where we please, near to or at a distance from a collateral branch, and either above or below it, and the result is always the same, the perfect closure and obliteration of the vessel. But the inflammation in the lower animal is always healthy, always plastic; and whenever in the human subject it bears the same character, I believe it carries the same result. If this be the case, then, and it is a question of pathology which any inquirer may determine for himself, it will remove the chief, if not the only, objection to an operation which is in other respects simple, comparatively safe, and easy of performance, free from pain and bleeding, and in which a wound of the vein is well nigh impossible. It is not pretended that secondary hæmorrhage will not occur; to be sure it will, but not in this case more frequently than in any other, not from the cause to which it has been most frequently attributed, and certainly not in a more hopeless and irremediable form than where the artery is more deeply placed, as it is in the old operation."

Art. 126.—*On Elephantiasis Arabum, or "Cochin leg."* By Mr. Francis Day, Civil Surgeon, Cochin.

(*Madras Quart. Journ. of Med. Science*, July, 1860.)

This affection is endemic along the Cochin coast, extending, but with decreasing severity, to about ten miles inland, within which limits goître is likewise found. In Indo-Europeans and in natives the proportion of cases would seem to be about the same—as many as about one in eighteen. Hereditary transmission appears doubtful; and sex appears to have little or no influence. Persons of all occupations and castes, whether strictly vegetarians, partakers of mixed diet, or mostly consumers of flesh, are attacked indiscriminately, and though the poverty-stricken classes are most liable, the richer do not escape. Locality is the chief predisposing cause; and the primary attack usually commences, and existing disease is aggravated, either in the monsoons or during the prevalence of strong land winds.

Mr. Day mentions a curious fact, with a view to show that the causes of malarious disease and elephantiasis are not identical. A Protestant clergyman, about seven years since, erected a row of sixteen cottages in Cochin, on a strip of ground about fifteen yards wide fronting a tank (the remains of the old fort ditch), and having their rear close to the old fort wall, which is higher than their roofs, totally screening them from any sea breeze, whilst plantain trees exist in every available spot. From across the tank blows the land wind: ventilation is absent, whilst the old wall being used as a common privy, the usual results are perceptible. The proportionate sickness, as might be anticipated, exceeds that of the surrounding population, and the severity of malarious fevers is greater than elsewhere in Cochin. But out of 106 inhabitants, there is not one case of elephantiasis, though, calculating in accordance with the rest of the population, six should be affected. The sepoys, whose tour of duty in this station is about one year, though attacked by malarious diseases, do not suffer from elephantiasis. Mr. Day says, also, that he has found anti-periodics of no utility, excepting in their general tonic action.

If leprosy, whether of the true tubercular or anæsthetic variety, attacks a person, the supervention of elephantiasis Arabum may reasonably be anticipated: on the contrary, elephantiasis Arabum rarely degenerates into leprosy.

Elephantiasis, as found in Cochin, may be *defined* as consisting, constitutionally, of a peculiar fever, returning at irregular intervals; and locally, of hypertrophy of the skin and subjacent areolar tissue, due to adventitious deposits.

Premonitory symptoms Mr. Day has been unable to detect.

The developed attack consists of constitutional and local symptoms. The constitutional ones are as follows:—a peculiar description of fever, designated elephantoid fever in this paper, as a rule, is present in all the cases, although badly developed in a few exceptional instances.

Elephantoid fever has a distinct intermitting or remitting cha-

racter; during its paroxysms an enlarged and painful gland almost invariably exists in some portion of the affected limb, between the site of the local effusion and the patient's body. Should a leg or arm be the diseased part, this glandular swelling will, as a rule, be present in the groin or axilla; but in some rare cases it is found in the ham, or at the bend of the arm, beginning at the same time as the fever, it subsides, without suppuration, a few days after the pyrexial symptoms have ceased. The whole of the glandular induration rarely disappears, as long as the local symptoms due to effusion remain unchecked.

The typical number of paroxysms in elephantoid fever is three, but in some instances only two or one occur. Cases which have three paroxysms at one attack almost invariably have three at the next; the same regularity is perceived in those with only one or two. In no case, unless due to the supervention of malarious or irritative fever, are more than three paroxysms perceived. There is no regularity shown as to the interval of freedom from fever in each case.

Its type somewhat resembles a quotidian without premonitory symptoms, but the pulse is usually quiet and regular, whilst a most severe headache remains in the apyrexial periods. When three paroxysms occur, the first is generally the most intense, and the third least so. Hot, cold, and sweating stages are present. The cold is rarely absent, and generally of about two hours' duration, though often prolonged: nausea, retching, or severe vomiting occurs, should food be partaken of during this stage. The more frequent the returns of fever, the greater the probability of bilious vomiting. Severe headaches are usually experienced in both temples, and described as cutting like a knife through the brain, or else as a numbing pain affecting the occiput and upper portion of the spinal column. In some instances the patients complain of feeling as if the brain would burst its envelopes. Delirium sometimes lasts from one to four days. Costiveness is usually obstinate.

In the hot stage the severity of the above symptoms is augmented, or now sets in without rigors, should they not have been previously present. The countenance is expressive of great suffering. The skin is generally hot and dry; pulse not very frequent, rather irritable, or even natural; tongue clean and moist, furred and dryish, or pale and anæmic; urine usually deficient in quantity, and high coloured.

In the sweating stage, the severity of these symptoms begins to decrease, the headache becomes less intense, the fever declines, generally in a profuse perspiration; the urine is sometimes passed in large quantities, and in some instances it is found to be albuminous.

When the fever is finally subsiding, the bubo becomes free from pain, and diminishes in size, but does not entirely disappear.

The local symptoms are in some cases at first obscurely developed, but with each succeeding attack of elephantoid fever they become more decidedly marked. The local swelling usually commences the first day of the elephantoid fever, soon after the paroxysm shows itself. It generally continues augmenting for two or three days, after all

signs of pyrexia have subsided. It may be hot, elastic, or slightly pit on pressure; with severe lancinating, throbbing, or burning pains (even when the strictest repose is observed), which are most intense along the course of the absorbents, but have not the smallest approach to erysipelatous inflammation. In slighter cases itching and burning are usually felt.

A reddish or dusky line, having a cord-like feel, may generally be perceived along the course of the absorbents, between the local effusion and the glands.

During this acute stage, great variations in the amount of the effusion are perceptible: thus it may decrease in one part, whilst it augments in another; or the whole limb may alternately enlarge, and decrease in size, for several successive days. The circumference of the diseased part is larger in the afternoon and evening than in the morning.

In old-standing cases which are progressing favorably, augmentation in the size of the affected part sometimes occurs, without any alteration in the bubo, but slight febrile symptoms are generally present. In rare instances fever occasionally returns, whilst the effusion is steadily diminishing.

In some unusual cases, headaches, more especially in the occipital region, and sluggishness of the bowels, are the only constitutional signs that mark the presence of elephantoid fever, with the exception of irritation and enlargement of glands in some portion of the body.

The foregoing symptoms are those affecting the extremities; should the scrotum be the diseased part, the only difference is that the number of paroxysms is generally less. Elephantiasis may attack the integument of any part; even the palms of the hands, or soles of the feet, may become the seat of this unsightly malady; in many instances, it even appeared to affect the body as a whole.

As the disease progresses, the local symptoms become too well marked to be overlooked by the most casual observer. If it has affected the lower extremities, the augmentation in size generally commences on the dorsum of the foot; in some instances the toes swell, and by degrees become a rounded, shapeless mass; in others, the greatest circumference of the limb is just above the ankle, or at the calf. The swelling of the foot is almost invariably divided from that of the leg, by the annular ligament binding down the integument across the anterior surface of the ankle. Whatever may be the form the disease takes, the limb usually remains serviceable, unless from excessive pain occurring at periods of elephantoid fever, or from inconvenience due to great weight. The joints continue unaltered. In some old-standing cases irregularities on the surface of the swelling take place, and at the bottom of the depressions between two elevated parts, fissures or cracks often commence, from which a thin whitish or watery fluid, having a foul smell, is discharged. In a few instances warty-looking tubercles or elevations arise, or the swelling becomes dry, scaly, ulcerated, or even leprous.

Generally from four to six days after the subsidence of the pa-

roxysms of elephantoid fever, the limb gradually returns to a size but slightly, or even not at all, in excess of what it was immediately previous to the feverish attack. Alterations in its circumference are continually taking place, in the interval which exists between the last paroxysm in one attack and the first paroxysm in the next, but being slight they are frequently unobserved.

Elephantoid fever in the course of a case generally sets in suddenly, usually with occipital headache, rapidly succeeded by the cold stage. These accessions of fever do not return at any particular lunar changes, or after distinct intervals of time; the exact day of their advent cannot be prognosticated; salivation does not prevent them; whilst any sudden chills or checks to perspiration may induce them; more than one patient stated that attacks of fever were caused by over-exertion, and the author has had reason to think such an idea well founded. The cold and hot stages, terminating in the sweating, are generally distinctly marked. In a very severe case in a prisoner in the jail, who was under treatment for six months up to the time of his death, the following intervals existed between the first paroxysm of each attack—twenty-five, nineteen, forty, sixteen, twenty-eight, nine, and twenty-two days, whilst each attack consisted of three paroxysms.

In a few old-standing cases the size of the swelling slowly augments, whilst the feverish paroxysms gradually become less marked, until they quite disappear, or only remain in the form of costiveness, headache, and slight febrile disturbance. On the other hand, should the swelling become stationary, fever may still be present, but with a greatly decreased severity. Should the patient's constitution not be depressed, each local augmentation occurring at feverish periods may be quite absorbed before the next attack of fever. The size of elephantoid effusions often remains stationary for years, and then recommences enlarging. As a rule, the local augmentation in size is in direct relationship to the frequency and severity of the feverish paroxysms; or perhaps more correctly speaking, the amount of constitutional disturbance affords a good indication of the rapidity of the effusion.

Certain causes may occasion an increase or decrease in elephantoid effusions. Should the lower extremity be diseased, notwithstanding the absence of fever, great exertion may immediately be succeeded by augmentation in the size of the affected limb. A discharge, if not very irritable, sometimes promotes its decrease. Attacks of watery diarrhœa may tend towards reduction of bulk, especially in cases where the severity of the elephantoid fever is lessening.

The only ill effects caused by elephantoid swellings appear to be occasional attacks of lancinating pain, or itching weakness, weight in the limb, and consequent difficulty in moving it, varying in proportion to the patient's strength and the size of the affected part, Great deterioration of health, with sallowness and even jaundice, sometimes occurs, but in the majority of cases the general system does not permanently suffer until the disease has existed for a lengthened period.

Complications of a general or local character are at times per-

ceptible; head symptoms are by no means rare, and delirium of from one to four days' duration, or even more, may be present. Malarious fever ending in general dropsy, in one instance, and cholera in two others, carried off patients affected with elephantiasis. Metastasis did not take place in any old-standing case, but in a slight one the disease disappearing from the left lower extremity reappeared in the scrotum; in a second instance, the patient stated that, leaving one lower limb, it had shortly returned in the other.

Local complications mostly consist of inflammation and abscess, sometimes involving the subcutaneous bursæ of the knee and elbow joints, and not unfrequently resulting in death with typhoid symptoms.

. . . . *Microscopical appearances.*—Dr. H. V. Carter, Professor of Anatomy in the Medical College, Bombay, having been good enough to examine several specimens sent him by the author, detected the following appearances:

A toe removed (in Case No. 48), "skin, a considerable amount of fat was mixed with the fibrous tissue, which latter much resembled ordinary white fibrous tissue, being clear wavy and interlaced. After the addition of acetic acid, very few nuclei were seen, but a considerable number of small elastic fibres; which in their thicker parts appeared inclined to break up into segments. The whole structure of the skin was hypertrophied, from cuticle to bone, the latter being unaffected. The papillæ of the corium were of enormous sizes, and beautiful microscopic objects."

A section (Case No. 48), from the centre of the integument of the leg, "appeared made up of coarse granular, slightly wavy, and sometimes nucleated fibres, arranged in large bundles running parallel with each other, and blending; the bundles interlaced and crossed. There was none of the clear and delicate appearance in it of ordinary white fibrous tissue. The arrangement reminded one of that of the fibres forming the middle coats of arteries. Numerous nuclei were seen, but irregular in size and form, mostly oval and granular, collected in small groups, or close-set on some of the fibres. After the addition of acetic acid they became very distinct, but only a small quantity of the yellow elastic tissue was seen. A slight amount of adipose tissue was intermixed with this specimen. The entire thickness of the skin was of uniform dense consistence. Cross sections of several ducts were seen, with here and there an appearance of involuntary muscular fibre.

"In the muscles, fat was found to have accumulated amongst their fibres, but otherwise, excepting by pressure, they were unaffected. The striæ were always clear. It could not be said that either the fibrous or muscular tissues had undergone degeneration."

ART. 127.—*Notes on an affection called "Burning of the Feet."* By Mr. EDWARD J. WARING, Physician to His Highness the Rajah of Travancore.

(*Madras Quart. Journ. of Med. Science*, Oct., 1860.)

This obscure and intractable affection, which apparently has no nosological name, is confined almost entirely to the natives of India,

although it has occasionally been met with in Europeans. It is said to have been almost unknown previous to the first Burmese war in 1325; at any rate, it has been much more frequently observed since that period in Arracan, Burmah, the Tenasserim provinces, Penang, Singapore, and our other Eastern settlements, than on the continent of India, although even in the latter it now forms a large proportion of admissions in the hospitals of native regiments.

Occasionally it occurs as an idiopathic affection, unconnected apparently with any other disease; but most generally it appears as a sequence of fever, bowel complaints, rheumatism, and beri-beri; and it is not unfrequently concomitant with some forms of leprosy. Mr. Malcolmson considers that it is connected with scorbutic disease.

It exists in various degrees of severity, from an uneasy harassing sensation of heat and tingling, to the painful extreme of burning, destructive of sleep and appetite in the first instance, and latterly being productive of serious injury to the general health. The sensation of heat is often experienced at the same time in the palms of the hands and the soles of the feet; and when severe in the latter, it occasions an aching also along the tibiæ as far as the knee. There is no inflammation, tension, discoloration, nor visible change in the limb, the excruciating burning pain being the only symptom present, and the spot principally referred to as its seat is the extremity of the foot, the heel and instep being the less affected.

Dr. McKenna, who, during many years' residence on the Tenasserim coast, had ample opportunities of studying the disease, gives the following excellent description of the history and symptoms usually observed:

"The precursory symptoms, ascertained by minutely questioning the patients, are nearly as follows:—langour, sometimes a loss of appetite, pains in the extremities, shooting over different parts of the body, and which frequently become easier towards evening; in the larger joints these pains are more acute than in any other parts.

"As the disease advances, the countenance becomes anxious and cachectic, with slight febrile excitement; bowels, though usually regular, are sometimes suddenly seized with a looseness; pulse at this period small and frequent. To these symptoms succeed debility, great irritability, restless nights, unrefreshing sleep, general emaciation, burning and pricking at the soles of the feet and palms of the hands, and, in due course of time, pretty extensively diffused over the whole body.

"As the disease progresses, distinct exacerbations and remissions come on, the former for the most part during the day, the latter towards the evening; this is so invariably the case, that the nights at this stage of the disease are passed with some comfort to the patients, while the days are dragged on, each succeeding one rendering them less able to bear up against it: so soon as the sun shows itself above the horizon, the burning and pricking, especially in the soles of the feet and palms of the hands, commence and continue with little or no remission until the sun again begins to disappear. The recurrence is regular, and at this time the countenance becomes particularly anxious, and a degree of carelessness is evinced by the patient, in answering the questions put to him. The skin, to the touch, is not above the natural standard;

the pulse, however, is small, quick, and irregular; prostration of strength considerable, and, unless some opportunity at this period occur of sending the patients to the Madras coast, the powers of the system soon become exhausted, emaciation and debility go hand in hand, and death at last must be expected."

Mr. Playfair distinguishes two varieties of this disease, as usually met with; one, in which the parts affected are in a constant state of moisture from sudor; and the other, in which the extremities are dry and sometimes scaly: but besides these, other varieties are met with; in some the feet only are affected, in others the hands only, in many both hands and feet. In a few, the feet are dry whilst the hands are bathed in sweat; but in all the disease is very distressing, generally preventing all natural rest, and disordering the animal functions in a remarkable degree; "the patients," adds Mr. Playfair, "describe their sufferings as nearly insupportable, and there is scarcely a disease in which the sufferer is so speedily and completely exhausted."

Mr. J. Bell informed Mr. Malcolmson that, in several patients labouring under this disease whom he met with at Tanjore, pain was felt in the situation of the last lumbar vertebra on rotating the spine, but not on pressure. Mr. Waring's own experience is opposed to this statement; though he carefully examined numerous cases of this affection during his residence in the Tenasserim provinces, in no single case, as far as his memory serves him, was pain in the spine complained of.

The causes are very obscure, and pathological anatomy has not hitherto thrown much light on its nature; indeed we cannot expect to have much additional information on the subject, so long as the prejudices of the natives respecting post-mortem examinations remain unaltered. Although the disease was very common amongst the sepoys and other recently arrived natives of Hindoostan, at Mergu, the author does not remember a single case in which a Burmese was affected.

Art. 128.—*Treatment of excessive Perspiration of the Feet.* By M. Gaffard.

(*Indian Lancet*, Dec., 1860.)

It is well known that excessive perspiration of the feet may be a very troublesome complaint. It not unfrequently produces excoriations between the toes, giving rise to an exudation of a disgustingly fetid odour; and it sometimes occasions ulcerations, which render locomotion very painful, or altogether impossible, forcing the persons affected to interrupt their business occupations. M. Gaffard, of Aurillac, recommends the following means, which he says he has employed in such cases with complete effect. The treatment consists in pouring between the toes a few drops of a liquid, composed of one gramme (fifteen grains) of red oxide of lead and twenty-nine grammes (about an ounce) of the solution of subacetate of lead (of the French Pharmacopœia); the sesquioxide of lead is pounded in a mortar of porcelain till it is finely divided; the subacetate is added gradually; and the whole is put in a bottle, which is shaken each time it is used.

This application made every eight days is sufficient, in most cases, according to M. Gaffard, to cure the affection, and prevent its return. The liquid, without completely stopping the perspiration, moderates its amount, and regularises the action of the morbid surfaces. The perspiration becomes inodorous, the skin regains its original thickness at the excoriated parts, without losing its pliancy, and the parts return to the natural condition of cleanliness and health.

PART III.

MIDWIFERY AND DISEASES OF WOMEN AND CHILDREN.

(A) CONCERNING PREGNANCY AND PARTURITION.

ART. 129.—*On Enlargement of the Thyroid Gland during Pregnancy.* By M. GUILLOT.

(*Archiv. Gén. de Méd.*, t. xvi, 1860; and *Medical Times and Gazette*, Nov. 24, 1860.)

M. Guillot observes that he has not unfrequently remarked hypertrophy of the thyroid taking place in pregnancy, and quite independently of the conditions usually considered to be favorable to the production of goître. The affection is usually not dangerous, but two cases which have come under the author's notice prove that it may prove perilous to life itself.

1. A lady, 30 years of age, in easy circumstances, and of excellent health and constitution, found her neck, during a first pregnancy, become the seat of a slowly increasing enlargement; but as she suffered little inconvenience from it, she paid but little attention to it. During a second pregnancy, in 1855, the tumour increased again, and became troublesome. After suckling had ceased, and the menses had returned regularly, the tumour continued its increase, giving rise to much pain, facial neuralgia, palpitations, vertigo, and suffocative asthmatic paroxysms. The author saw her, with M. Trousseau, in 1858, when the tumour, of about two décimètres in diameter in all directions, was found to be indistinctly divided into two lobes, its consistency being that of a lipoma, without irregularities, and the skin covering it being healthy. On compressing it, great embarrassment of respiration was produced. A few days after the consultation, the patient having become nearly asphyxiated during an attack of dyspnœa, laryngotomy was performed, with immediate relief. The patient, however, died two days afterwards, and no autopsy was permitted.

2. A young woman, aged 29, of good health and constitution, had perceived after her first pregnancy, four years ago, that her neck became larger, but she paid little attention to it. She was delivered of her second child nineteen months since. At the anterior part of the neck was a voluminous tumour of about thirty centimètres in circumference, extending from the thyroid cartilage to the sternum, and covered by healthy and moveable skin. Her respiration and voice were embarrassed, and she was liable to suffocative paroxysms. All these symptoms gradually came on from the time of her first pregnancy, undergoing especially increase from that of her second. After she had been a week in the Necker Hospital the paroxysms of

dyspnœa became more and more urgent, until at last one terminated fatally. The thyroid had nearly acquired the size of a human brain, and of course exerted great pressure on surrounding parts. The tissue of the gland, healthy in appearance, still was remarkable in various particulars. In the normal state, the framework of the thyroid consists of a fibrous tissue, but of slight density, constituting a multiplied series of little cellules lined by a very delicate epithelium. Within these cellules is contained an alkaline, albuminous liquid, in which are swimming vesicular globules, and well-rounded cells or molecules with or without nuclei. But the consistency of this tumour was more firm than normal, on account of its abundant fibrous tissue forming large, thick, multiple partitions, this density being still not so great as that of ordinary fibrous tissue. Its intimate structure resembled that of normal fibrous tissue. The little cavities or cellules were increased in size at some points to three centimètres, and at others at two or three millimètres. The minuter cellules possessed an epithelial covering, but the larger cavities did not. Beyond the increased volume produced by the excessive accumulation of the elements of the thyroid, all was in its normal state, with the exception of the absence of epithelium in the enlarged cellules. The lesion is therefore a hypertrophy of the fibrous and granular elements constituting the organ.

Supposing this to be a correct representation of what takes place in other cases of enlargement of the thyroid during pregnancy, the author is disposed to regard it as only one of the manifestations of the excessive production of fibrine during pregnancy. To this is in great part due the progressive development of the uterus and mammary glands. The framework, with each of its proper elements, exists in the latter, for example, but in insufficient quantity; and for the secretion of milk to become accomplished, it is necessary that these anatomical elements should be increased, such secretion not taking place from the mere afflux of blood, but in proportion to the new mass of additional organic elements. These are the utricles or terminal cells of the galactiferous canals, and the fibrous tissue serving as a support and common bond of union for all these utricles. Just as we can appreciate the incessant increase and accumulation of the galactigenous vesicles, we can estimate that of the generative nuclei of the fibrous tissue, until the fibrous network of the organ comes to occupy a considerable and highly important position in the constitution of the organ. Other signs of increased production of fibrine are found in the accidental osseous growths, accompanied by a thickened periosteum, which are found sometimes within the cranium or pelvis of pregnant women. Without adverting to the demand for such tissue in building up the fœtus and its membranes, we may refer to its prevalence in the development of the round ligament. "Being in the habit of endeavouring to trace out the mutual relations of pathological phenomena, and being convinced that most of the facts of detail are but the expression of an unity which the practitioner should seek to discover, I have endeavoured to bring these particularities together, which, perhaps, after all, though produced simultaneously, may not be united by any appreciable tie. However, this simultaneity of pro-

duction amidst a common general condition has struck me; and this is why, although with much reserve, I have been led to state that the hypertrophy of the thyroid body, during pregnancy, is one of the consequences, as it is one of the proofs, of the energy imparted to the fibrous elements of the system."

ART. 130.—*On the treatment of cases of Abortion, in which the Membranes and Placenta are retained.* By Dr. PRIESTLEY, Obstetric Physician to the Middlesex Hospital, &c.

(*British Med. Journal*, May 11, 1861.)

When abortion occurs in the early weeks, the ovum is frequently expelled without rupture of any of the membranes except the external decidua, because the attachments to the uterine cavity are unstable; the mass is then smaller and less difficult to push through the os uteri, and the contractile power of the uterus is very feeble. In the third, fourth, and fifth months, the decidual cavity is obliterated, the placenta has acquired more intimate attachments to the womb, and the contractile power of the uterus being greater, rupture of the membranes commonly takes place before expulsion. The embryo having escaped, the secundines may speedily follow, or, lying in the os uteri, they may be removed by the finger or some simple instrument. In a considerable number of abortions, however, in which the fœtus and liquor amnii have been voided, the secundines are not soon extruded; and, after the uterus has made repeated ineffectual attempts to expel them, the os uteri closes and action ceases. Instances of this kind are common in obstetric practice, and are often a source of much embarrassment to the practitioner. Obstetric authorities differ widely as to the treatment which ought to be adopted when the secundines are not thrown off spontaneously, and particularly as to the propriety of manual interference. Dr. Denman, Dr. Davis, Dr. Ramsbotham, and Dr. Dewees deprecate any attempts at extraction by the hand; and Mr. Ingleby held that "no manual extraction can be effected prior to the sixth month." Dr. Burns and Dr. Churchill regard interference in this way as only allowable in exceptional cases; and Dr. Tyler Smith stands almost alone in recommending the removal of the secundines in all cases of abortion where they are retained. The author regarded the question of treatment as an important one to all obstetric practitioners, as they might be blamed, on the one hand, for omitting a duty they ought to have performed, or, on the other hand, might be charged with meddlesome practice. The dangers and morbid conditions arising from membranous and placental retention are stated to be—

1. Flooding; this being sometimes of a very serious character, and the patient being always liable to hæmorrhage so long as a fragment remains.

2. Decomposition of the uterine contents, leading to local inflammation of the uterus and surrounding tissues, to phlebitis and phlegmasia dolens, and lastly to general poisoning of the system, as evidenced

by irritative fever, peritonitis, rheumatic pains, the formation of abscesses, and even the occurrence of death.

3. Sub-involution of the uterus.

4. The generation of some of the forms of mole out of the tissue left in the uterine cavity, and the hæmorrhage attending the presence and expulsion of these morbid growths.

The entire absorption of the placenta is regarded as uncertain, and not to be counted upon. Cases illustrative of the several sources of danger are detailed.

The author's experience leads him to believe that the effect of the administration of ergot is very uncertain, and that galvanism and injection of water are not to be depended upon. Any form of abortion-forceps which must be pushed beyond the reach of the finger he regards as useless and dangerous. He is thus driven to the conclusion that the introduction of one or two fingers into the uterus is the safest and and best way to remove the retained uterine contents. In his hands, such manual interference has never been followed by any evil results; and a considerable number of cases had fallen under his observation. He begs particularly to be understood as not advocating rash and violent attempts to empty the uterus. Rough and careless manipulation might be fatal to a patient; but the consequences of placental retention are so serious that, under ordinary circumstances, less risk was incurred by the operation. It is important to effect removal, not only before putrescence begins, but before the os uteri becomes much contracted; and if in six hours after the escape of the embryo the placenta did not follow, it might be removed. The extraction might be effected sooner than this if much hæmorrhage were present. He has found it convenient in operations to place the patient on the back, with the thighs flexed on the abdomen; and while one hand steadied and depressed the uterus externally, the other is with all possible gentleness passed into the vagina. The os uteri is then dilated with the index-finger, and the second finger followed if required. These two fingers form the best and most sensitive forceps; and, although time and care might be necessary to their introduction, their employment is most satisfactory. The administration of chloroform previous to the manipulation affords great assistance by relaxing the passages and saving the patient from pain. The author has succeeded in removing the placenta with the hand, in some cases, days and weeks after the escape of the fœtus; but he has never ventured on any such attempt if inflammatory symptoms and irritative fever had already set in. Where the os uteri is too contracted to permit the introduction of the finger for the removal of a placental mass, its dilatation could be effected by sponge-tents, which have the double advantage of staying hæmorrhage and facilitating the passage of the finger.

ART. 131.—*On the indications and operations for the induction of Premature Labour, and the acceleration of Labour.* By Dr. BARNES, Assistant Obstetric Physician to the London Hospital, &c.

(*Lancet*, April 13, 1861.)

In this paper Dr. Barnes traces the history of the various modes of inducing labour, discussing the actions and merits of each. He first points out the essential distinction between the deliberate induction of labour and the precipitate *accouchement forcé* of the older French practitioners. The only method used for a long time was the puncture of the amniotic sac directly over the os uteri. Experience showing that the premature escape of the liquor amnii led to the frequent peril of the child from undue compression in being forced through an imperfectly dilated cervix, Hamilton, to obviate this objection, substituted the separation of the membranes for a given space from the lower segment of the uterus; and Hopkins tapped the sac at a point remote from the os. Others gave ergot of rye. Merrem and Krause, in Germany, placed a flexible catheter in the uterus, leaving it there to excite pains. This plan is now adopted by Braun, of Vienna, who speaks highly of it. In 1820, Brünninghausen led the way in a series of proceedings for dilating the cervix by plugs and instruments of various kinds. In 1842, Hüter proposed to expand the vagina by inflating bladders introduced in a flaccid state. Braun then introduced his caoutchouc colpeurynter. These contrivances have been followed by inflammation of the genitals and death. The application of galvanism, of the irritation of the breasts, of the carbonic acid gas douche, are adverted to. The carbonic acid douche to the vagina has caused sudden death in the hands of Scanzoni. In 1846, Kiwisch introduced the vaginal warm-water douche; soon after Cohen, of Hamburg, revived a proposition of Schweighaüser in 1825, to inject water into the cavity of the uterus. This, the intra-uterine douche, is now extensively used. Although easy and convenient, this plan is not free from objections. Dr. Guillier has related a case in which sudden death followed a vaginal douche, turning conjectured that air had passed with water through the dilatable tubes into the peritoneum. Other fatal cases are known. The rapid injection of water into the uterus might detach the placenta; it might stretch the imperfectly developed uterine fibres beyond their power of reaction, causing paralysis. The author then adverts to the recent application of the caoutchouc dilator inside the os and cervix uteri for the purpose of dilating these structures. He quotes the case of Mr. Murray, and refers to the claims of Dr. Keiller and Dr. Storer. He then relates two cases of placenta prævia, in which he had himself accelerated labour, successfully opening the cervix for delivery by turning by aid of water-power applied to the interior of the cervix. He also relates the histories of three cases in which labour was induced and accelerated by the same method: one being a case of distortion of the pelvis simply, one of distortion complicated with cicatrized os, and one of almost complete obliteration of the cervix by cicatricial tissue. He

describes the instruments employed, and the advantages attending their use. The caoutchouc dilator acts gradually and gently; unlike the douche, it admits of being applied to the exact spot where a dilating and exciting force is required; as a means of overcoming rigidity, it is more certain and efficient than any other, superseding bleeding, incisions, tartar emetic, and the stretching by the hand. As an accelerator of labour, it is so perfect as to supersede altogether the *accouchement forcé*, an operation which might now be exploded. It enables the practitioner to deliver almost at will, not only on a fixed day, but at a predetermined hour, a power that gives us control over cases of convulsions, obstinate vomiting, exhaustion from disease or hæmorrhage, much needed and not hitherto possessed. In connexion with this subject, Dr. Barnes adverts to the importance of the method described by Dr. Brax on Hicks, of turning without passing more than two fingers into the uterus, by combined internal and external manipulation. Whenever expulsive pains could not be excited, this operation enabled the practitioner to complete the delivery on the spot.

The author concludes by classifying the methods of inducing labour according to their theraputical application. They should be divided into—A. Preparatory measures. B. Labour-provocative measures. C. Labour-accelerating measures. He insists upon this division, believing that in many cases no one method could be relied upon, but that it is desirable to proceed in regular gradation through the stages of preparation of the soft passages, the evocation of contractile energy, and the acceleration of delivery, selecting in each stage such means as are most suitable. By the judicious consecutive use of these means we have it in our power to terminate a labour with certainty within a given time, and that with a greater amount of ease and security to the mother and child than has been hitherto attained. This increased perfection of the operation justifies the hope that it might be applied to the relief of emergencies and dangers, which have hitherto baffled the skill of the physician.

ART. 132.—*Practical Observations on "Supporting the Perinæum."* By Dr. GRAILY HEWITT, Physician to the British Lying-in-Hospital.

(*British Med. Journ.*, March 30, April 20 and 27, May 4 and 11, 1861.)

With a view of arriving at some definite conclusions as to the proper treatment of the perinæum during labour, Dr. Hewitt examines two questions: 1. The effects actually produced by the operation "supporting the perinæum;" and 2. The causes of laceration of the perinæum.

The result obtained by examination of the first of these questions is this: that the only effect which could be said to be produced by "supporting the perinæum" is, retardation of the advance of the head; and that, unless by the exercise of a considerable degree of force, even this effect would not be obtained. Further, it is shown that other advantages which have been claimed for the operation have no real exist-

ence. And it is also pointed out how retarding the advance of the head is likely to interfere with the mechanism of the natural process by which dilatation is brought about.

The results arrived at by an examination of the second question—the causes of laceration—is, that so far as it is possible to form a conclusive opinion on the matter, unusual rapidity of labour is one of the principal causes of the accident in question. It results, from an examination of the subject, that the causes of laceration are very different in different cases; and hence the conclusion, that each particular case must be considered by itself.

What, then, is the practical result of this double inquiry into the value of the remedy—"supporting the perinæum," as applicable to the prevention of the evil—laceration of the perinæum.

"It appears to me," says Dr. Hewitt, "that the only conclusion we can come to is, that the operation must be rejected. Its object, if that object be limited to retarding the advance of the head, may be in itself good; but this particular method of attempting to gain that object is objectionable. In ordinary cases of labour, as a device for preserving the perinæum from laceration, I believe it to be practically worthless, and there are grave reasons for surmising that in many cases it has led to the very evil it was intended to prevent.

"The arguments derived from a careful consideration of the mechanism of the process of dilatation of the perinæum and expulsion of head, all, in fact, lead us to the conclusion that the proper treatment of the perinæum in labour is, under all ordinary circumstances, to abstain from active interference of any kind.

"Is the conclusion arrived at by reasoning, countenanced by the results of practice?

"In the works of Denman, we find the following:—'When women were delivered without assistance, I have not, in any case, observed any considerable laceration.' (Vol. i, p. 60.) That the accident does occur, however, in cases where the delivery occurs unassisted is now well known. The explanation I have already given of this occurrence—that the laceration is due in these cases, not to the absence of assistance, but to the rapidity of the labour—I would repeat.

"Drs. McClintock and Hardy consider medical assistance so necessary, that they endeavour to explain why laceration does *not* occur in cases of unassisted labour, on the theory, 'that inasmuch as these females are almost always involuntarily subjected to the deprivation we have mentioned, they habitually use their utmost endeavour to retard the birth of the child when they feel the head in the vagina, in the hope of aid reaching them before the critical moment of delivery; and another reason is that such patients have been spared the ill effects arising from vaginal examinations.' ('Report,' &c., p. 9.) It may, I think, be doubted whether patients do, as a rule, under such circumstances, exercise the kind of control mentioned. The exemption from laceration in such cases appears to be explicable in a very different manner. It is very certain that many deliveries, and rapid ones, do take place in the entire absence of all assistance, and with perfect safety to the mother, so far as the perinæum is concerned. The only conclusion to be drawn from the fact is, that assistance must be of

little service in ordinary cases, seeing that no bad result usually ensues in extraordinary ones when it is absent.

"We cannot, at this moment, procure any considerable numerical testimony as to the results of the non-interfering system; the practice of supporting the perinæum has been too universally adopted to allow of this being the case; but so far as the evidence procurable goes, it is calculated to give us every confidence in the resources of nature. Dr. West of Alford, and Dr. Swayne of Bristol, both assure us, from the results of a large number of cases, that the plan of 'letting the perinæum alone' has with them given very satisfactory results.

"Is there, then, nothing to be done to preserve the perinæum from laceration?

"There are certain precautions which it is necessary to take, and to which I should be disposed to attach very considerable importance. When the head is passing through the vaginal outlet care must be taken that there be no impediment to its passage forwards. If the thighs of the patient be closed, and if the legs be in a straight line with the body, there may be an impediment of this kind, as in the case of Dr. Hall before alluded to, and the natural result is, that the fourchette is called upon to bear a much greater strain than is necessary. The practice adopted in France, of delivering the woman lying on the back with the legs separated, is the one best calculated to remove this source of danger to the perinæum. So, again, in the delivery of the shoulders, care must be taken to direct the delivery as much forwards as possible. It is very easy to see how infinite mischief may be produced by want of attention to this rule, and it is, in fact, extremely probable that laceration is not seldom due to this cause.

"By adopting these simple precautions, I believe that the practitioner will do all that is possible to *prevent laceration* in ordinary cases.

"Some other points, in reference to the treatment and management of the perinæum during labour, must now be considered.

"*Inunction.*—It has been recommended that the soft parts should be well and frequently lubricated with oil or lard during the last stage of labour, and with the view of promoting the stretching of the soft parts. It is difficult to see how such lubrication can relax the perinæum, or promote the stretching process; it can do no more than render the surfaces to which it is applied smooth, and so far facilitate the passage of the parts of the child over the same. Like 'supporting the perinæum,' however, the practice of inunction has had an efficacy imparted to it which it is very far from deserving. There can, however, be no *objection* to using lard or oil, and, when the parts are hot and dry, the patient certainly derives satisfaction therefrom.

"*Dilatation of the vaginal aperture* is a procedure which was formerly much in vogue; the fingers being introduced in form of a cone, and the orifice thus dilated. Unless, however, such force were used as would be quite unjustifiable, little could be thus effected. The head of the child is the best dilator.

"Dr. Snow Beck believes that, by preventing the perinæum from being pushed down before the head, and 'by drawing it backwards

and upwards over the protruding part, rupture may sometimes be avoided.' ('Brit. Med. Jour.' March 10th, 1860.) It is certainly a far more rational proceeding, as I have before shown, to endeavour to procure dilatation in this manner, than to attempt to do so by pushing the perinæum forwards. The principle of the recommendation is undoubtedly correct, and, as I have before shown, it was the principle of Rœderer and Hamilton; it is possible that the delivery may, in a few cases, be facilitated by the exercise of a slight distensive action in the direction indicated. The exercise of any degree of force would be, however, most objectionable.

"In the next place, I would offer a few remarks on the treatment of the perinæum in cases where the labour does not come under the category 'ordinary.'

"Supposing laceration to be impending, what is to be done?

"In the first place, what are the signs that laceration is impending? This we must first determine. Now, I have attempted to show that in what is called 'rigidity of the perinæum' the condition present is one which is not calculated to excite apprehensions on this score, and having got rid of these cases, the number remaining is very few. I believe that the presence of *elasticity* of the perinæum is a sign of favorable import in the labour, and one which is indicative that laceration need not be feared. When the head recedes quickly after each pain, this indicates possession of elasticity. When such recession does not occur, when the pains are very violent, when the perinæal tumour has suddenly become much larger, and the parts are evidently very much stretched—if all these conditions are present together in a first labour, the practitioner may, perhaps, reasonably dread the occurrence of laceration. This I believe to be the most ordinary combination of circumstances under which laceration may be said to be imminent, and even these are very few and far between.

"In such a case as the one just put, the obvious indication would, at first sight, seem *to retard the progress of the head.* I believe that any attempt mechanically to retard the progress of the head is objectionable, as well in cases of natural labour as in those cases where laceration is believed to be impending, and for the reasons which have already been stated. The chief of these are: 1. That, by retarding the head, we lose the beneficial stretching action of the head on the perinæum; and 2. Because the attempt is not likely to be successful in those cases where it would be supposed to be most required. It appears even probable that, by interposing actual mechanical resistance, the undue force with which the uterus is acting may be increased. In fact, most of the objections (not all) which applied to the operation 'supporting the perinæum,' apply equally to attempts to retard the progress of the head as a means of saving the perinæum from laceration.

"The proper method of retarding the head, supposing it to be resolved to attempt it, would seem to be that recommended by Dr. Leishman; namely, to oppose the fingers inserted within the vagina directly against the head itself. Pressure against the sacrum, also recommended by Dr. Leishman, appears to be useless for the purpose now in view.

"A careful survey of the facts on record and the history of the subject generally, have led me to the conclusion that, where laceration is actually threatened, the proper treatment would be to procure additional space by making a slight incision into the stretched and dilated perinæal structures on each side of, and at a short distance from, the fourchette. Experience has shown that incisions thus made subsequently heal with very great rapidity. The incisions are to be made so as to run no risk of injuring the rectum. Such a procedure as this will, I believe, be called for in an extremely small number of cases; and here I would remark that the *so-called* cases of 'rigidity' do not by any means come under the category of cases necessitating such treatment. The congenitally narrow condition of the vaginal outlet would seem to be the one most requiring it.

"The subject of the treatment of cases of *rigidity of the perinæum* requires a few words. There may be *real* rigidity constituted by the presence of firm unyielding bands, cicatricial or otherwise, around the outlet of the vagina, or in cases where the vaginal orifice is naturally very small. For these very exceptional and rare cases, when a sufficient time has been allowed to elapse, incision is a proper remedy. I refer now, however, more particularly to the treatment of cases more commonly met with, and to which I have previously alluded as cases of *so-called* 'rigidity,' where the perinæum is not dilated, because the force from above required for such dilatation has not been yet exercised; these being cases, not of rigid perinæum, but of imperfectly acting uterus, or of obstruction from certain causes which I need not here again enumerate. We hear of certain remedies having a special power of relaxing the perinæum. I have no faith in the existence of such remedies, and interpret their action in a very different manner. The perinæum must be considered a passive agent in the matter. I believe that the remedies which are said to procure 'relaxation,' produce this apparent effect chiefly by rousing the uterus to greater activity; the rigidity disappearing because a greater force is brought to bear on the perinæal structures. In cases of the kind now under consideration, the attention of the practitioner will be most profitably employed in ascertaining why it is that the head of the child is not propelled downwards with greater rapidity on the perinæum. In many of these cases of so-called rigidity of the perinæum, a careful use of the forceps is the best, the proper remedy, the uterine contractions being deficient in power.

"The case which I have, in the course of the series of practical observations now brought to a conclusion, argued, is the one of rational *versus* empirical treatment of the perinæum during labour. I think there can be little doubt as to the nature of the decision which will be formed by those who take the pains to consider the question attentively and dispassionately."

ART. 133.—*A cause of Protracted Labour not generally recognised and easily removable.* By Dr. DE LAFFORE, Physician to the Hospice des Quinze-Vingts, Paris.

(*Journ. of Pract. Med. and Surgery*, Oct., 1860.)

— Obstetricians profess the opinion that, in natural parturition, matters are so disposed to facilitate its accomplishment, and that protracted is labour referable but to the insufficiency of the expulsive power, or to the rigidity of the soft parts, which must be distended and dilated to afford a free passage to the child. They opine that the contact between the bones of mother and fœtus can induce but temporary obstruction, and consider it even as sometimes favorable to the egress of the fœtus and therefore to the rapidity of labour. Dr. de Laffore does not share in this general optimism, and endeavours to show, in a memoir he has forwarded to the Academy, that *in most cases protracted labour, in natural parturition, is referable to the obstruction caused during uterine contraction, by the occiput or whatever part of the fœtus presents, abutting against the symphysis pubis.*

After a rapid description of the anatomy of the parts to be traversed by the fœtus, and the position of the child and uterus with regard to these, the author proceeds to say:

Direct examination of the parts during the pains shows that at each uterine contraction, the head of the fœtus meets the symphysis, a contact which interferes with, when it does not absolutely obstruct, the descent of the vertex into the true pelvis, the uterine force which acts upon the head being neutralised by the resistance of the symphysis. Thus, when after the rupture of the membranes, the forefinger is applied upon the cervix uteri during an interval of the pains, the cervix is found to be moveable within the pelvis at some distance from the symphysis; but as soon as contraction recurs, the os uteri is suddenly brought close to the symphysis, and vigorously squeezes the finger, if it be not withdrawn in time, against that bony surface. The extremity of the finger is then caught between two bones, the occiput and the pubis, and cannot be removed while the contraction lasts, a space of time which the amount of pain causes to appear considerable.

"I have been caught," says M. de Laffore, "in this trap, and if I did not scream it was not for want of inclination. Being now cautioned, I easily avoid it."

For this purpose it will be found sufficient to apply the forefinger upon the cervix, and during the contraction of the uterus to press upon the vertex, so as to prevent the head from approaching the symphysis. The finger may moreover be used as a lever, the fulcrum of which would be at the pubic arch, to direct the occiput backward and downward so as to place it in the centre of the true pelvis, and bring it nearer to the perinæum.

The head, powerfully propelled by the expulsive power, and meeting with resistance from the soft parts only, thus descends below the pubic arch, dilates the os uteri completely, promptly reaches the lower parts of the pelvis, which it distends, and issues from the outlet after

a few strong contractions, increased in their energy by the mother's pleasing consciousness that labour, which she imagined could be brought to a conclusion but by the dreaded intervention of instruments, is approaching its close.

When the pains rapidly follow each other, the finger may be permanently kept upon the cervix, but pressure should be exercised during contraction only; should the intervals between the pains be longer, four or five minutes for instance, the finger should be withdrawn after each contraction, and reinserted at the beginning of the next.

If, from the close approximation of the symphysis and occiput, it is found impossible to apply the pulp of the finger upon the cervix, the palmar aspect of the hand turned towards the sacrum, it may be introduced in an inverted position, *i. e.* with the pulp turned towards the symphysis. The head then bears upon the finger nail, and at each contraction of the womb, gently glides along the inclined plane formed by the latter.

Both these procedures lead to the same result, viz. *the rapid expulsion* of the fœtus; but when the operator has the option, the first is preferable.

"It would be impossible for me to enumerate here," says Mr. de Laffore, "the numerous instances of tedious natural labour I have observed since 1843, in which this innocuous method has rendered signal service. Twenty midwives, whom I could name, have summoned me to apply the forceps, in order to bring to a conclusion *natural labour* which had lasted twenty-four, thirty-six, and even forty-eight hours without progress, despite the continuation of uterine contraction, and the proper conformation of both the fœtus and the maternal pelvis. In these cases, instead of applying the forceps, as I was urged to do, I have merely used pressure with the forefinger upon the presenting part of the fœtus, in a downward and backward direction, and invariably, *in less than an hour, nay sometimes in a few minutes*, I have delivered the patient of a living child, without inducing pain or injuring in the slightest degree any of the organs. I may add that several practitioners and some midwives to whom I had described my method, have informed me that they had resorted to it in tedious labour, and had thus much accelerated its conclusion."

ART. 134.—*Pelvic Contraction, and the duties it imposes on the Practitioner during Pregnancy and Labour.* By M. PAJOT.

(*Jour. of Pract. Medicine and Surgery*, Oct., 1860.)

The following quotations are from an editorial article in the 'Journal of Practical Medicine and Surgery,' founded upon some clinical remarks recently delivered by M. Pajot, in the Hospital of the School of Medicine at Paris:

"M. Pajot differs from M. Dubois with regard to the line of conduct to be adopted when the diameter of the pelvis varies from $3\frac{2}{5}$ and $2\frac{4}{5}$ inches. In principle, M. Dubois allows the pregnancy to progress towards its conclusion, satisfied that accouchements supposed to be

difficult, if not impracticable, have been accomplished by nature more easily than would, *à priori*, have been supposed. M. Pajot, on the contrary, induces premature delivery, because he has found in many instances cephalotripsy to have occasioned the death of the mother when performed at the close of pregnancy, whereas, in general, premature delivery, artificially induced, is far less dangerous for the mother.

"Let us now suppose a case of pregnancy at its full time in a woman afflicted with well-ascertained pelvic coarctation. The accoucheur must here take into account the degree of the contraction and the presentation. If the diameter of the pelvis is equal or superior to 3¾ inches, natural labour is possible, and the practitioner should abstain from interference; there are limits, however, to such abstention, and here again M. Pajot does not entirely agree with M. Dubois. In the first place, what M. Pajot denominates abstention, would begin but from the period only at which full dilatation of the os uteri has been attained; he takes no account of any previous time. Assuming this as a starting point, M. Dubois professes that the accoucheur should not interfere for six or eight hours when the head is, as most commonly happens, at the brim; and for two or four hours when the vertex has descended into the true pelvis, with a view to obviate eschars or sinuses resulting from too long protracted pressure. M. Pajot is of opinion that the limits indicated by M. Dubois to the accoucheur's interference cannot be adopted as a general rule, because there are cases in which the head being at the brim, four hours' abstention on his part might sometimes be too long, and in other instances twenty-four hours might be too little. The progress of labour is governed by extremely variable circumstances, and M. Pajot therefore refrains from meddling, so long as the life of both mother and child are not imperilled, and while the uterus continues to contract. The obstetrician may thus abstain from interposition for three days, or find it urgent to interfere after half an hour. The practitioner should not here obey the mere indications of his watch, but the dictates of reason and experience.

"The signs which inform him that it is proper to act are, as regards the child, the egress of meconium (when the seat does not present), or the slackening of the circulation (the pulse falling, for instance, from 120, its natural standard, to 40). For the mother, he should be guided by the agitation and frequency of her pulse, the redness of the countenance, together with the symptoms of weakness or of serious disturbance of the nervous system; when these are present, the accoucheur is imperatively required to interfere.

"We have described M. Pajot's precepts for the application of the forceps in difficult parturition, and the dangers he sees in its unnecessarily repeated use. When, after several introductions of the instrument, he has reason to believe that the child has ceased to live, or when, in greatly diminished capacity of the pelvis, it is desirable to act on the fœtus, he resorts to *reiterated cephalotripsy*.

"On the 12th of March last, a short, deformed, rickety woman, aged twenty, was brought to the hospital of the School of Medicine. She had been thirty-six hours in labour, but her general condition was as yet satisfactory. It was a case of presentation of the head,

and, as far as could be judged, the pelvis was much contracted. The summit of the head was elongated and descended slightly below the brim, preventing the finger of the observer from reaching the promontory. M. Pajot determined on having recourse in this instance, for the fourth time, to the operation mentioned above, which differs very materially from the procedure usually adopted for destruction of the head. Thus the tractions resorted to after crushing the head render cephalotripsy as dangerous as the Cæsarean section, whereas, by crushing the bones in several successive operations, and allowing the parts to adapt themselves to each other, they are gradually and naturally expelled without any peril to the mother.

"In the present case, M. Pajot, in the first instance, pierced the skull with Blot's perforator; he then inserted the blades of the cephalotribe in the same manner as those of a forceps, without taking any especial care as to the regularity of their application to the head. When the latter was grasped, he locked the instrument, after having ascertained that none of the neighbouring parts were included, and turning the handle so as to close the blades, crushed the bones. It is at this stage of the operation that accoucheurs generally perform more or less powerful and continued traction, a most dangerous practice which often leads to the laceration of the soft textures of the mother by fragments of the bones of the skull. M. Pajot slightly displaced the head by gentle rotation, unclasped the blades, and withdrew the instrument.

"This operation was performed at four o'clock p.m.; it was repeated at eight p.m., and again at midnight; the head then descended without difficulty, the chest and shoulder were crushed in the same manner, and at five a.m. the patient was delivered. Twenty-four days after the performance of this severe instrumental labour, the woman returned to her usual avocations, and M. Pajot produced her in the lecture-room, laying much stress upon the excellence of a procedure which has succeeded four times out of five, in his hands, and which seems to him likely to supersede the Cæsarean operation whenever the diminished capacity of the pelvis forms an insuperable impediment to natural parturition."

ART. 135.—*On a new sign of Post-partum Detachment of the Placenta.* By Mr. JOHN CLAY, Surgeon-Accoucheur to the Queen's Hospital, Birmingham.

(*Dublin Quarterly Journal of Medical Science*, Nov., 1860.)

The rules usually given in obstetric manuals and text-books, for the management of the placenta, after the birth of the child, are:—to wait for a pain; or, to carry the finger along the cord to the os uteri, and, if its root can be felt, it may be fairly assumed that the placenta is thrown off, and may be easily extracted by gentle traction of the cord, with the aid of external manipulation. If these instructions be faithfully carried out, can we rely upon the facts elicited as infallible proofs that the placenta is separated from the uterus? Pain may mislead, as it frequently arises from other causes than contrac-

tions of the uterus; and even if the insertion of the cord can be felt, it is not always conclusive on this point, as the root of the cord may sometimes be felt when the uterus is in a flaccid condition, by using moderate traction on the cord, and yet the placenta be not thrown off. Besides, the patient often lustily complains of the smarting pains caused by the frequent examinations deemed necessary to ascertain the fact; and often she positively forbids such a mode of interference.

"Four years ago," says Mr. Clay, "I was led, from these causes, to investigate the subject, with the view of improving, if possible, upon the old mode of managing the deliverance of the after-birth. I thus ascertained certain facts, from which I came to the conclusion, that a very simple sign existed by which the separation of the placenta, after the birth of the child, might be indicated; and, having tested it in upwards of nine hundred cases, I hope I may be considered to be fairly entitled to lay the results at which I have arrived before the profession.

"Before dividing the umbilical cord, I always apply two ligatures, and make both sufficiently tight to prevent the occurrence of hæmorrhage. If the maternal part of the cord is now examined, it will be found to be in a flaccid condition, and almost free from blood; but if it be again examined, at an interval, say from one to three minutes, it will be found to have acquired increased specific weight, and that the vessels are more or less filled with blood. The one fact may be ascertained by poising the cord on the fingers; the other by slightly grasping the cord near the vagina, with the thumb and forefinger of the left hand, and, with the fingers of the right hand, suddenly compressing it, when a well-marked sense of fluctuation is perceived underneath the fingers of the left hand,—a kind of resiliance similar to the feeling produced when an elastic tube filled with fluid is suddenly compressed.

"When the placenta is thrown off, or sufficiently detached to give rise to a tolerably free hæmorrhage, the cord loses its increased specific weight and the hydrostatic property just mentioned. These phenomena occur so invariably, that *the loss of the previously acquired hydrostatic properties of the cord after the birth of the child constitutes the sign of detachment* previously referred to.

"The whole of the phenomena are manifested in three stages, viz.:—1st, a state of flaccidity; 2d, a state of repletion; 3d, a state of flaccidity.

"If the umbilical cord be tightly grasped by a spasmodic contraction of the os uteri, or by irregular contractions of the body of this organ, the *loss* of the particular hydrostatic properties may be delayed for a brief interval; but in a few seconds the spasm subsides, and those phenomena are produced which indicate the separation of the placenta, and that this structure may be safely extracted. These signs are not, of course, always equally marked in every case,—often requiring experienced tactile management, in order to detect their presence. When the uterus is in a flaccid condition, the phenomena are manifested in a very slight degree, but are still perfectly reliable. On the other hand, when the uterus is contracted, with some de-

gree of firmness, on the placenta, they are so well marked that the most inexperienced may readily detect them. In cases of partially adherent placenta, the disappearance of the hydrostatic properties, after being once fully developed, and the failure to deliver the placenta by the usual manipulations, have always indicated to me the necessity for promptly adopting artificial detachment by the introduction of the hand. In twin cases, if the cord is firmly tied, I have invariably found that the signs persisted until the birth of the second child. In one case, where the hydrostatic properties disappeared, after being well marked, before the birth of the second child, I found, on examination, that the corresponding placenta was detached, and I at once removed it, which otherwise would probably have been suffered to remain. Neither mother nor child incurred any risk.

"It sometimes occurs that the placenta is separated simultaneously with the birth of the child. In this instance, the first series of phenomena may be absent; and it may be prudent to wait before proceeding to extract the placenta, although it may be generally effected with safety.

"The practical value of the application of these facts to obstetrics is obvious, as by merely compressing the cord in the manner previously indicated, the precise time of separation may be easily ascertained, the placenta at once extracted, and the patients thus freed from those frequent annoying examinations usually employed. The prompt delivery of the placenta, on the first efforts of the uterus, is very important, as this organ contracts then more efficiently, and the risk of hæmorrhage is not so great, and it may be fairly assumed that the puerperal convalescence is not so protracted as under a more dilatory proceeding.

"To students, or inexperienced practitioners, it might be a safe instruction to impart,—not to interfere in the extraction of the placenta so long as the hydrostatic properties herein defined are persistent."

ART. 136.—*On concealed accidental Hæmorrhage at the latter end of Pregnancy, and during Labour.* By J. BRAXTON HICKS, Assistant-Physician-Accoucheur to Guy's Hospital.

(*Trans. of the Obstetrical Society of London*, vol. ii, 1860.)

In this paper Dr. Hicks gives an account of all the cases he has been able to find of this formidable complication of labour, one of them having occurred in his own practice. Of these cases, twenty-three in number, no less than fifteen ended fatally.

"Any one," says Dr. Hicks, "who has been at the pains of reading through the above reports will, I think, be struck by the great similarity of the symptoms in all the cases. It is not my intention to enter fully into all the symptoms, but to confine myself to those which are diagnostic; and this is the more important, because in many instances the true condition of the case has not been detected till too late, while in some instances another accident has been suspected.

"And 1st. The most prominent and constant symptom is the *faintness, or collapse* which very frequently takes place suddenly. It is

possible that the loss of blood from the system is not the only cause of the collapse, but that the injury to the uterus by the tension has some share in increasing that state.

"2dly. Almost as constantly, the *great distension of the fundus uteri*, whereby it protrudes more than naturally into the epigastric region, accompanied by an indistinct, doughy feel, the outline of the fœtus being lost at that part; and in about half the cases a very distressing sensation, 'as if about to burst,' experienced by the patient, with or without pain or tenderness on pressure, which possibly would be more frequently complained of were it not masked by the collapse.

"3dly. The negative fact, the *nearly complete absence of true labour-pains* at the first occurrence of faintness, and for some time after. Thus, in nineteen, where this point is taken notice of, there were labour-pains only in three, and in one of these they were very slight.

"Taking these three points collectively, the diagnosis will not be difficult, if we consider with what other conditions attending pregnancy this accident is liable to be confounded.

"1st, *with rupture of uterus*.—If in ruptured uterus the fœtus have escaped, the recession of the presenting part will declare the accident, the uterus will have changed its form and size, and the child will probably be felt outside the uterus. When the rent is small, and a portion only of the fœtus has escaped, the diagnosis will be more difficult; but as rupture of uterus never takes place without some pain, the above-named symptoms supervening without any pain will clearly distinguish the two accidents. Should, however, the pains be already present, then the increasing enlargement, and indistinct feel of the fundus, will point out that the uterus is becoming filled rather than emptied.

"2d, *with rupture of some other internal organ*.—It will be sufficient to reflect upon the position of the pain, namely, the fundus uteri, the fact of the patient being pregnant, the absence of any violence or previous disease, the increasing bulk of the uterus, in order that that organ be fixed upon as the seat of mischief.

"3d, *with ordinary fainting*.—Perhaps this is more liable than any other condition to throw the attention of the practitioner away from the uterus, being a not infrequent occurrence in pregnancy and labour. The hand placed on the uterus will show the peculiar state of that organ, and may lead us to suspect the cause of the faintness. The addition of pain at the fundus will still further assist, and suspicions should be roused should the faintness be protracted or severe.

"Therefore it will always be proper in any case of severe or protracted faintness to carefully watch the state of the uterus; and should we find it enlarging, firm, and tense at the fundus, the outline of fœtus lost above, and pain over the distended uterus, we may conclude that hæmorrhage is going on internally, the more particularly if the patient has not been exerting herself nor exposed to violence, and if the liquor amnii have already escaped.

"Referring to the analysis of these reports, it may be perceived that the more advanced pregnancy becomes, the more fatal is this form of accidental hæmorrhage, and this appears to arise from the following circumstances:

"1st. The more easy separation of the placenta from the uterus at full term than at earlier periods, whereby there is less restraining power to the impetus of the blood.

"2d. The capability of the placenta containing a greater quantity of blood, from its increased diameter, without breaking down its marginal attachment, as well as the vascular system being on a large scale, so that more blood is effused in a given time.

"3d. The uterus being already distended to its normal extent, becomes from the increase of its contents less capable of expulsive efforts, and the uterine sinuses are thereby more patent, in consequence of the arrangement of their falciform pseudo-valves.

"The treatment of this formidable accident does not appear to have much light thrown upon it by the above cases. Still, there can be no doubt that the ordinary treatment employed in accidental hæmorrhage should be applied to this variety. The indications are clearly to empty the uterus, and to detach the placenta wholly at as early a period as is compatible with the safety of the mother. How far the particular part of that treatment, namely, the rupture of the membranes, can be relied on, cannot be gathered by the details now before us, for in them we find that in nearly the whole of those that died the membranes had been ruptured. Whether any of the seven who recovered would have died had it not been done, it is impossible to tell. Nor should we expect the rupture of the membranes in this accident to give such relief as in the ordinary cases of accidental hæmorrhage. It will, no doubt, lessen some of the tension, but the effused blood or clot is bound down by the placental edge and membranes, preventing that part of the uterus to which the placenta is attached from contracting. Still, as the evacuations of the waters tend to hasten labour, we should always employ it, if for no other purpose, as well as the other methods now pursued in this division of flooding. But when the patient is *in extremis*, it seems best, rather than empty the uterus at once, which may be a fatal operation, to support plentifully with stimulants; rupture the membranes, if not already broken naturally; apply very firm external pressure to the uterus, especially at the fundus, with cold, and wait till a little improvement takes place; as the system revives, secale should be given, or galvanism, if at hand, employed to excite the uterus to contract. Should the parts be dilating or dilatable, and the uterus fail to respond, it seems useless to give any more time for a fresh effusion; therefore, if the child's head be low, seize it with the forceps; or if *in utero*, turn as gently as possible, of course in all cases keeping the uterus in as active a state as possible by the above means, frictions, and pressure during the expulsion of the infant, blood, and placenta. In my own case there was a decided relief to the system after the expulsion of the uterine contents, which seems to give a little encouragement to interference, if any strength remain."

ART. 137.—*A case of Ruptured Perinæum and birth of the child between the os vaginæ and anus.* By Mr. J. BAKER BROWN.

(*Trans. of the Obstetrical Society of London*, vol. ii, 1860.)

CASE.—On April 22d, 1860, Mr. Lawrence, of Wandsworth, requested me to see, with him, Mrs. —, æt. 20, who was delivered a fortnight since of her first child. The labour progressed satisfactorily until the head was on the perinæum, when Mr. Lawrence, finding the os vaginæ did not dilate, and that the pains were very violent, and that the head of the fœtus was pressing severely on the perinæum, sent for a neighbouring practitioner, who suggested the use of the forceps. Before he could return with them, however, the perinæum gave way between the os vaginæ and the anus, and the child was expelled completely through the opening. In three or four days a deep slough came away, and the edges of the wound began to look healthy. The bowels were confined by opium, and poultices were applied to the perinæum.

On examination, I found a large opening, admitting three fingers, in the centre of the perinæum, the edges of which looked healthy. On passing my finger through the os vaginæ I found a firm, hard, unyielding band, in place of the elastic constrictor vaginæ. This was evidently the cause of the unusual laceration. Assisted by Mr. Lawrence and my son, Mr. Arthur Brown, without chloroform, I revivified the edges of the wound, and introduced two deep, iron-wire sutures. The laceration had evidently involved a few of the superficial fibres of the sphincter, but they had healed satisfactorily. I did not, therefore, divide the muscle, as in the ordinary operation for ruptured perinæum, but I cut through the fourchette, and the parts were so hard and almost cartilaginous that the patient was not conscious of my cutting it. I ordered opium, to keep the bowels quiet, for a week, and the patient to have generous diet, and to suckle the child thrice in twenty-four hours.

April 29th.—Removed the sutures, and found the perinæum was sound and deep, and it is evident that she will be none the worse for the accident at the end of the month.

Practical remarks.—It appears to me that in cases of this kind it would be right, at the time of the severe pressure on the perinæum, and when the os vaginæ is not at all dilating, to divide it freely on each side with a blunt-pointed bistoury, so as to prevent the possibility of this peculiar lesion.

(B) CONCERNING THE DISEASES OF WOMEN.

ART. 138.—*A Clinical Treatise on Diseases of Women.* (*Clinique Médicale sur les Maladies des Femmes.*) By Dr. BERNUTZ, Physician to the Hôpital de la Pitié, Paris; and Dr. GOUPIL, Physician to the Hospitals of Paris.

(8vo, Paris, Chaumerot, pp. 590, 1861.)

This work is not a systematic treatise on all the diseases of women. It is a series of monographs, which is not intended to close with the present volume. The subjects at present treated are three in number: retension of the catamenia, peri-uterine hæmatocele, and intra-pelvic hæmorrhage in extra-uterine pregnancy,—the first

two being from the pen of M. Bernutz, the last being from that of M. Goupil. Each monograph abounds in cases, whose only fault is undue fulness and length; there being eight in the first, nineteen in the second, and fifteen in the third. The whole volume is thoroughly practical, and no one can arise from its perusal without a considerable addition to his knowledge. In particular, we have been pleased and instructed with what is said about peri-uterine hæmatocele—an affection to which Dr. Bernutz was the first to elicit attention, and about which (notwithstanding the excellent labours of Dr. Tilt) little interest would seem to have been excited in this country as yet.

ART. 139.—*On the use of Apiol in Dysmenorrhœa.* By M. BAILLOT, Senior Surgeon to the Hospital at Bar-le-Duc.

(*Journal of Pract. Med. and Surg.*, April, 1861.)

The experience of M. Baillot agrees with that of MM. Homolle and Joret, as to the efficacy of apiol as an emmenagogue in cases where menstruation is attended with more or less pain and peri-uterine suffering.

Miss A—, a cotton-weaver, æt. 19, a healthy and vigorous young woman, in whom the catamenial function became established at the age of fourteen, experienced at every menstrual period violent suffering in the back, and uterine pain, which extended to the inguinal regions, and to the thighs, and was moreover accompanied by a sense of acute smarting in the vulva. Many remedies had been prescribed without benefit, when in September last M. Baillot exhibited to the patient, morning and evening, one capsule containing four grains of apiol, from the first premonitory indication of the appearance of the menses, and throughout their duration, and the functional hæmorrhage was on this occasion unattended with any pain. The same treatment was again resorted to the following month, and since then the catamenia have been perfectly regular and painless.

M. Baillot relates two other analogous instances, and further adduces another case of ineffectual uterine tenesmus in a girl aged eighteen, who had never menstruated before. A capsule of apiol was administered, night and morning, on the first appearance of the symptoms, and the next day the menses were secreted without distress, and lasted for eight hours. The same remedy was used with similar beneficial effect the following month, and M. Baillot states that the function is now perfectly established.

ART. 140.—*On the prophylactic treatment of some morbid symptoms coincident with Lactation.* By Dr. PAUL DELMAS.

(*L'Union Méd. de la Gironde*; and *Journ. Prac. Med. and Surg.*, Feb., 1861.)

In opposition to the view, adopted by many writers, that painful affections of the breasts of nurses are inevitable evils, M. Delmas asserts, that if women intending to nurse had proper information on

the subject, and were willing to adopt the necessary precautions, nothing would be easier than to avoid the distressing symptoms which change a pleasing duty into a painful and protracted martyrdom.

A few precautionary measures taken in time and perseveringly followed up, are sufficient. For two or three months before confinement, young mothers should, several times daily, endeavour to stretch the nipple. The organ should be grasped at its base or at the areola between the finger and thumb, gently pressed and drawn out; this should be done repeatedly until the nipple has acquired its full size. M. Delmas further recommends daily and reiterated lotions with astringent fluids, such as tannin or bark solutions, or coarse red wine, and the parts to be rapidly dried. The breast thus becomes accustomed to exposure to friction, and less irritable. It is, moreover, desirable that the corset should be so constructed as not to press upon the bosom, flattening of the nipple being often the result of too tightly fitting stays. As to lactation, M. Delmas is at a loss to conceive why women are advised not to suckle before the occurrence of the milk-fever; the colostrum is useful to the infant, and it is, moreover, highly advantageous to put the child to the breast a few hours after delivery, because the gland has not yet acquired its full development, and the nipple is more easily seized by the nursling. Among the other precautions indicated by the author, we may remark that he recommends the mother to prevent the child from chewing, as it were, the nipple, a habit which loosens the epidermis and facilitates the production of chaps and superficial ulcers.

When from ignorance or carelessness these sores have supervened, it is necessary to cure them promptly; but the treatment requires much patience from both surgeon and patient.

If the mother persists in nursing, the practitioner's line of conduct is one of no common difficulty. In many instances, however, M. Delmas has found the following pomade useful to the mother, and innocuous to the child:

℞ Ung. Cucumis, ℥ij;
Zinci oxydi, gr. ij. M.

The ointment should be applied to the nipple twice or three times a day. But whatever ointment, solution, or powder be used, it is requisite to clean the nipple previously to the application of the medicinal agent. Should these measures fail in giving relief, M. Delmas has recourse to an artificial nipple made of goldbeater's skin, invented by M. Valentin, this he considers preferable to all other nipple shields hitherto contrived. This new appliance is perforated at its extremity with four or five holes, and is covered with an adhesive substance, which fixes it firmly to the skin. In order to apply it, the bell-shaped apparatus should be moistened, and also the nipple and areola. The nipple is then placed on the breast, so that its edges shall be closely attached to the skin around the nipple. This simple precaution of the adhesion has been careful, [illegible] and affords an effectual protection in

cases of chaps or ulcers. It may be left two or three days *in situ*, when the parts which cease to adhere can be readily removed. A second artificial shield is then substituted in the place of the first, and in general a complete cure is effected in ten days or a fortnight. It is prudent, however, to persevere in this plan for some short time longer, especially as this appliance has the great advantage of not disgusting the infant, who does not even notice its presence.

Matters are much simpler when the patient ceases nursing. The chief cause of her sufferings being thus removed, the dressings above mentioned readily bring about cicatrization of the fissures. With regard to the distension of the breasts induced by the discontinuance of lactation, it may be relieved by the use of iodide of potassium, which M. Delmas considers to be a perfect specific in this case. Our readers have been made acquainted with the result of M. Roussel's experiments on the subject, and they are fully confirmed by M. Delmas' practice. Whatever be the amount of congestion or of swelling of the breast, seven grains of iodide of potassium daily, neither more nor less, will, after two days, induce diminution and softening of the gland, and a change in the nature and quantity of the secretion, which becomes both more watery and less abundant. In some cases a disease, which in France is popularly known under the denomination of *Poil* yields in twenty-four hours, rendering a second exhibition of the iodide unnecessary; but, in most instances, from three to six days are requisite to effect a cure.

Art. 141.—*Annular Laceration of the Cervix Uteri.*
By Dr. T. Herbert Barker.

(*Trans. of the Obstetrical Society*, vol. ii, 1861.)

The term "annular" is chosen to distinguish that form of laceration during labour by which a complete ring of uterine structure, consisting of the cervix and os uteri, is separated from the remainder of that organ, the child having passed through the laceration, and not through the os uteri. The cause of this kind of laceration is, the protracted pressure of the head against a circle of the uterine parietes in a contracted pelvis,—perhaps, also, conjointly with a sharp linea ileo-pectinea. In the case related, the author was called, on the fourth morning of labour, to a primiparous patient, forty-two years old, when he found the os uteri was not dilated larger than a florin, the pelvis contracted, and the bladder much distended. Soon afterwards, an ear could be felt under the pubes, through a transverse laceration in the cervix uteri, anteriorly. An attempt was made to deliver with the forceps, but unsuccessfully, and craniotomy was performed. After the birth of the child, a circular mass was found in the vagina, consisting of the os and cervix uteri, separated from the body of the uterus at every point, with the exception of an inch and a half posteriorly. The os uteri was of the size of a florin, and its margin thin, even, complete, and well defined. The lacerated edge was jagged, rough, rather thicker than the margin of the os, but not so thick as the intervening uterine texture. The

colour of the entire mass was of a purplish-red, venous tinge. There was no hæmorrhage. It sloughed away on the third day. The catheter was required for seven days afterwards. The patient recovered, and the catamenia returned. With regard to the treatment, Dr. Uvedale West, in a letter to the author, writes that in such a case he would endeavour to dilate the os uteri by introducing first one, then a second, then a third and a fourth finger, side by side, to procure sufficient dilatation to admit either the vectis or the forceps.

ART. 142.—*Cases of Ruptured Perinæum with subsequent delivery without rupture.* By Mr. J. BAKER BROWN.

(*Proceedings of the Medical Society of London. Lancet*, Feb. 9, 1861.)

CASE 1.—H. M—, æt. 38, mother of two children. The rupture was complete, and happened in the first confinement. June 18th, 1855, Mr. Brown operated. Two years afterwards, the lady was delivered by Dr. Cape, when the perinæum escaped uninjured.

CASE 2.—E. J—, æt. 28. The rupture was complete, and happened in the first confinement. July 21st, 1855, Mr. Brown operated. This patient has since been twice delivered by Dr. G. Stephens, of Manchester, and no injury has resulted to the perinæum on either occasion.

CASE 3.—Mrs. T—, æt. 35. The perinæum was torn in her first confinement, but the rent was extended in the second, and was complete. October 9th, 1856, Mr. Brown operated. She has since been twice delivered by Dr. Walker, of Birkenhead, at the full period, without any injury to the restored perinæum.

CASE 4.—Mrs. M. S—, æt. 25, sent to me by Sir C. Locock; mother of two children. Complete rupture of perinæum in first confinement four years ago. March 21st, 1857, Mr. Brown operated. In August, 1860, this lady was delivered by Dr. Gream, and the perinæum escaped uninjured.

CASE 5.—Mrs. R—, æt. 22. The rupture was complete, extending two inches up the rectum, and happened in the first confinement. July 5th, 1858, Mr. Brown operated. This lady has since been delivered at the full period by Dr. Hodges, of Rochford, and the perinæum escaped uninjured.

ART. 143.—*On the use of Opiates and Sedatives in the treatment of Uterine Inflammation.* By Dr. TILT.

(*Lancet*, Feb. 2, 1861.)

The conclusions at which Dr. Tilt has arrived, after a very extensive trial are these:

1st. An occasional large dose of an opiate, exhibited by the mouth may be useful; but the frequent repetition of such doses obscures the case without curing uterine inflammation, increases constipation and converts some patients to opium-eating.

2d. The best way of administering sedatives [illegible] on the breast, in cases of uterine inflammation is by the rectum [illegible] to the skin around the anus in one or two ounces of warm milk. [illegible] adaptation has been careful, quell pain, without narcotizing [illegible] affords an effectual protection in

the relief of pain often accelerates the cure of disease, and I am d to find that Scanzoni has come to a similar conclusion.

d. Opiates are advantageously given by the vagina in injections suppositories, and hysteralgia is sometimes cured by leaving one two grains of acetate of morphia in contact with the neck of the mb every third or fourth day.

4th. The neuralgic symptoms of uterine inflammation are often lieved by adding opiates to the poultices, ointments, and liniments, hich are applied to that portion of the skin nearest to the seat of ain.

5th. Other remedies failing, opiates may be applied epidermically, r to the raw surface of the blistered skin, or hypodermically or in- ected in the cellular tissue.

ART. 144.—*On the use of Tincture of Actea in Puerperal Hypochondriasis and Depression.* By Dr. SIMPSON, Professor of Midwifery in the University of Edinburgh.

(*Medical Times and Gazette*, Dec. 8, 1860.)

"Before closing these observations," we quote from a clinical lecture by Dr. Simpson on puerperal mania, "allow me to direct your attention for a minute or two to a morbidly depressed state of mind which you will sometimes meet with in practice, weeks or months after the patient has been confined. When a patient has been much pulled down by hæmorrhage, or becomes exhausted by nursing, a state of anæmia or chlorosis, attended by more or less mental depression, want of energy, and loss of memory, particularly of proper names, will supervene, requiring the administration of an improved diet, wine and tonics, such as iron and quinine. But occasionally an analogous degree of mental misery and depression comes on without any preceding hæmorrhage, and when the mother has not acted as a nurse at all. These cases are generally cured by the tonic means I have just alluded to; by change of air and scene, when that is practicable; and in some obstinate instances, where these measures fail, you will find Dr. Seymour's plan of steadily giving an adequate opiate every night, to be a mode of treatment followed by the best results. Of this type of disease I lately saw a very marked case that had utterly defied all the proposed modes of treatment, and that yielded at last with a rapidity which astonished both the patient and myself, under the use of the tincture of the black snakeroot or actea. This plant, the *Actea* or *Cimicifuga racemosa*, has been long spoken of as a remedy for rheumatism, and particularly in the more acute forms of the disease. In the edition of Gray's 'Supplement to the Pharmacopœias,' published in 1821, you will find the use of it in rheumatism stated. Latterly it has been employed by some American physicians as their most valuable remedy in acute rheumatic fever. My very intelligent and excellent friend Dr. Voris, of Rochelle, New York, told me, two years ago, that since employing the tincture of actea in rheumatic fever—and it is a very common disease in his district—he had seen the disease

almost always cut short before the eighth or tenth day; the drug acting apparently as a simple antidote to the rheumatic poison, and curing without diuresis, diaphoresis, or any other discharge. The American physicians give a strong tincture of the root in acute rheumatism in doses of thirty to sixty drops every two, three, or four hours. It may be given, if you choose, along with alkaline salts, or other anti-rheumatic drugs. I have found it, in my own case, repeatedly cure an attack of lumbago with wonderful rapidity. Some of the American practitioners who have written upon actea, have spoken of its use in terms that are, no doubt, exaggerated. Thus, Dr. Davis, of Chicago, says that, after much experience, he has no more doubt of the efficacy of actea in the early stage of acute rheumatism, than he has of the power of vaccination as a preventive of smallpox. But our American brethren have used actea also extensively in chorea and other anomalous forms of nervous disease. However unlike rheumatism and chorea may look to the superficial observer, yet the able investigations of Dr. Begbie and other pathologists have shown, as you are aware, an analogy, if not an identity, between the blood-poison which produces rheumatism and that which produces chorea. Dr. Physick, of New York, and Dr. Jesse Young, of Pennsylvania, about thirty or more years ago, recommended actea strongly in chorea. Latterly, Drs. Lindsey, Kirkbride, Otto, and others, have published their experience in favour of the same drug in this disease. In a case of anomalous and severe chorea of long standing, which was under my care some months ago, the actea was given with excellent effect. The patient had been previously treated, both in France and in this country, with zinc, iron, arsenic, and all the usual remedies employed in this malady. But I have made all this long episode regarding the actea, not so much to speak of its use in the preceding diseases, as of its use in puerperal hypochondriasis and depression. A lady, the mother of several children, was twice the subject of the most painful mental despondency a month or two after delivery. On one of these occasions she was confined in London, and had the advice of several eminent physicians; but the disease took a very long and tiresome course, seemed to defy entirely all remedies, and gradually and very slowly terminated. On the last occasion on which the attack occurred, this patient was confined under my care here, and went home to England some weeks subsequently, perfectly well. She returned, however, in about a month to Edinburgh, in the lowest possible state of depression, a perfect picture of mental misery and unhappiness. I tried many plans to raise her out of this dark and gloomy state. All failed. At last, fancying from some of her symptoms and complaints, that there might be a rheumatic element in the affection, I ordered her fifty drops of tincture of actea thrice a day. After taking one dose she refused to continue it, as the drug had a taste so similar to laudanum, and as all opiates had always made her worse. On being reassured that there was no opiate in the medicine, she recommenced it, without any faith, however, in the results, as she had in a great measure lost faith in all remedial means. When I saw her next, some eight or ten days

afterwards, she was altered and changed in a marvellous degree, but all for the better. On the third or fourth day, as she informed me, the cloud of misery which had been darkening her existence suddenly began to dissolve and dispel, and in a day or two more she felt perfectly herself again in gaiety, spirits, and energy. But nothing would induce her to give up the actea for six or eight weeks longer; and the last time she passed through Edinburgh, she told me that she had prescribed her own remedy to more than one melancholic subject with nearly as great success as she had used it in her own case. Will it be of use in many such instances? I know not. *Nous verrons.*"

ART. 145.—*An inquiry into the correctness of the doctrine of William Hunter in regard to Retroversion or Retroflexion of the Gravid Uterus.* By Dr. W. TYLER SMITH, Obstetric Physician to St. Mary's Hospital.

(*Lancet*, Nov. 17, 1860.)

After giving an account of the way in which our knowledge of the displacement of the uterus has been acquired, and the opinions of ancient and modern authors, but particularly of William Hunter upon this subject, Dr. Tyler Smith proceeds to lay down his own views, and especially to dispute the Hunterian doctrine that the chief and exciting cause of complete retroversion is retention of urine and distension of the bladder. He then goes on to say: "My own attention became directed to the subject of retroversion of the gravid uterus in the following manner:—I attended a lady—a patient of Sir Ranald Martin—who, in the unimpregnated state, suffered from complete retroversion or retroflexion. She left this country, with the uterus retroverted, to join her husband in India. She soon became pregnant, and went the full time. The question suggested itself to me, 'What was the condition of the uterus in this case, after impregnation occurred?' And I resolved to take any opportunities which might occur to me of answering it. I have now seen a considerable number of cases in which the retroverted uterus has become impregnated, and have carefully watched the progress of gestation under these circumstances. The result has been a conviction that the most common cause of retroversion of the gravid uterus is not to be found in the state of the pelvis, or the condition of the bladder, but in the occurrence of impregnation in the retroverted uterus, and in the tendency of the organ thus impregnated to grow and develope itself during the early months of pregnancy, in the retroverted or retroflexed position. When an ovum is deposited in the retroverted uterus, the enlargement of the organ causes a greater sense of weight and pressure in the pelvis than ordinary pregnancy. The os uteri approaches the pubis, and the fundus projects towards the hollow of the sacrum. The fundus is found to enlarge considerably when examined from time to time by the finger. At length, unless the pelvis is of very large size, the bladder and rectum are pressed upon so as to interfere with their functions, and

difficult micturition and defecation, especially the former, are the results. Owing to the retention of the gravid uterus within the pelvis, there is little or no increase in the size of the abdomen. There is usually a great amount of pain and discomfort in the lower part of the back, and the sympathetic affections of pregnancy are frequently more severe than usual. Abortion very frequently occurs from the mechanical irritation of the uterus." He had published an outline of these views in 'The Lancet,' in 1856.

After making some further general observations to prove the strength of his argument, Dr. Tyler Smith proceeds to say,—"In conclusion, I may observe that it seems to me the great use of the knowledge of the mode in which retroversion of the gravid uterus occurs, will be in the prevention of the full retroversion, or strangulation, as I have ventured to term it, of the gravid uterus in the pelvis. As long as retroversion was supposed to take place suddenly and mysteriously, little could be done to avert it; but if, as I believe, the displacement dates from the very beginning of pregnancy, in the great majority of cases, we may do much by position, and attention to the bowels and bladder, to prevent any dangerous symptoms; and, aware of the condition of the uterus beforehand, we shall be more ready to give prompt mechanical assistance when it becomes necessary to pass the hand into the vagina to carry the fundus above the brim.

"When retroversion has existed in early pregnancy, but has been relieved spontaneously or otherwise by the ascent of the fundus, labour takes place without any unusual difficulty. We ought, however, in the management of the puerperal state, to endeavour to prevent a return of the uterine displacement. The occurrence of pregnancy is rather favorable than otherwise to the cure of retroversion. In the latter months of pregnancy, the fœtus acts as an intra-uterine pessary; the organ is straightened, and in the return of the uterus to the size of the unimpregnated state by the process of involution, we have a better chance of curing retroversion than under any other circumstances. The abdominal bandage should not be tight enough to force the uterus into the pelvis. The patient should be encouraged to lie on her right or left side, inclining to the prone position, but avoiding recumbency. The bladder should be frequently relieved, and any violent straining during defecation avoided. She should remain in bed or on a couch longer than usual, and before resuming her ordinary duties the condition of the uterus should be ascertained; and if any tendency to a return of retroversion exists, an air pessary should be worn in the vagina as long as may be necessary to ensure a right position to the uterus.

"Several other cases of retroversion of the unimpregnated uterus, followed by retroversion in the gravid state, have fallen under my observation, besides those related in the present paper; but as they would only be a repetition of those already detailed, I will not trouble the society with the particulars of them. What has happened in my own practice must necessarily have occurred in that of others; and probably it is only necessary that the matter should be understood for the production of a number of well-authenticated cases of the same

kind by those engaged in obstetric practice. I must now leave it to the society to decide whether the facts and observations which have been adduced do not prove that the Hunterian theory of gravid retroversion is no longer tenable; and whether we must not in future look upon retroversion of the unimpregnated state, which is well known to be a common affection, frequently admitting of impregnation, as the principal cause of retroversion of the gravid organ. In raising this discussion, I would yield to no one in veneration for the name of William Hunter, as being undoubtedly one of the greatest and most honoured names in obstetric science."

ART. 146.—*On Ovariotomy, with cases and remarks on the different types of the operation, and causes of its mortality.* By Dr. W. TYLER SMITH, Obstetric Physician to St. Mary's Hospital, &c.

(*Lancet*, Feb. 16, 1861.)

Dr. Tyler Smith maintains the justifiability of this operation on the ground of the favorable comparison which could be made between its mortality and that of some other recognised capital operations, such as amputation of the thigh, ligature of the subclavian, and adult lithotomy; and also between the extirpation of the ovary, and simple tapping, or tapping with the injection of iodine. It is shown that of 130 cases of simple tapping, 69 were dead at the end of one year, and 114 were known to have eventually died of the disease. Of 130 cases of iodine injection after tapping, 66 died or refilled, and 64 were said to have been cured; but in these cases the nidus of the disease remained, and it might at any time recur. Of 395 of completed ovariotomy, 212 recovered, and 183 died; showing that, notwithstanding the acknowledged dangers of the operation, the results were more favorable than after tapping or injection. The author then proceeds to a detail of his own cases.

CASE 1.—*Monocystic dropsy of the left ovary.*—The tumour was very large. This patient, fifty years of age, was operated upon on the 15th of October, 1860, and that day four weeks she was well enough to travel to Boston, in Lincolnshire. She remains in good health.

CASE 2.—*Polycystic disease of the left ovary.*—The operation was performed November 15th, 1860. She had been previously tapped and treated by pressure. There were extensive adhesions. This patient was threatened with peritonitis, but in three weeks she was convalescent.

CASE 3.—*Monocystic disease of the left ovary.*—The patient was operated on December 7th, 1860. There were no adhesions. The tumour was of moderate size. The patient went on well, and was convalescent at the end of a fortnight.

CASE 4.—*Polycystic disease of the left ovary, of the colloid type.*—The tumour was of large size, and combined with ascites. Operation January 4th, 1861. Four months before, the patient had been delivered of a child at the full term. There were extensive adhesions. In this case recovery was slow, but she sat up about three weeks after the operation, and is going on very favorably.

The operations were performed by the short incision, the cysts being tapped and brought through the wound. The ligature was allowed to fall into the pelvis. A very moderate amount of opium was given, and stimulants were administered on the third or fourth day, in the absence of inflammatory symptoms. Great care was taken to guard the patients against any miasmatic or contagious influence. The author preferred the ligature to the clamp, on account of the straining caused by the latter in the event of vomiting or tympanitis. As far as statistics are known, the proportion of recoveries is greater when the clamp is not used. The only objection to the ligature is the length of time before it comes away. The following remarks on the causes of mortality, and the means of diminishing it, conclude the paper:

"Nearly 17 per cent. of the fatal cases have occurred from shock or collapse. This source of mortality should be met by resorting to the operation before the patient has reached a state of exhaustion. It is not in many cases decided on till the patient is in such a state of weakness as to be unable to bear this or any other operation. Except in cases of extensive adhesion, there is nothing necessarily belonging to the operation which should produce dangerous shock. This source of danger will be diminished when the operation becomes generally recognised as an established and necessary proceeding in suitable cases. Improvements in diagnosis will doubtless lessen the number of cases in which the abdomen is opened without finding ovarian tumours. Earlier operation would also lessen the number of cases in which adhesions occur.

"Exactly 16 per cent. have died from hæmorrhage. All, or nearly all of these cases may be prevented by care in tying the pedicle, and in securing hæmorrhage from the separation of adhesions. The ligature should never be left until we are quite sure that all bleeding has ceased. One source of the bleeding has been the use of the ligature without transfixing the pedicle. There is a notable increase of mortality where the pedicle is tied in one mass, as compared with transfixion and tying in two or more portions.

"Peritonitis is by far the most fatal complication which can occur. Not less than 43 per cent. of the fatal cases have died in this way. Looking to the histories of the cases thus lost, it can, I believe, be shown that peritonitis does not depend so much on anything inherent in the operation itself, as upon miasmatic or contagious influences. This seems proved by the great mortality after the operation in hospitals as compared with private practice. It is difficult to get a successful result in a large hospital, yet the operations are nowhere more skilfully performed, nor the after-treatment better. Peritonitis following ovariotomy is evidently in the majority of cases not simple inflammatory peritonitis, but a disease closely resembling puerperal fever, and, like it, commonly due to some external poison. This is the only way in which the excessive mortality after the operation in hospitals in this country and on the continent can be explained. The ovariotomy patient is as susceptible as the puerperal woman, or even more so. Such cases cannot be safely collected together or mixed with other patients, and, in the long run, I believe the results

cannot be as favorable either in general or special hospitals as under other circumstances. In the operations detailed every possible care was taken that they should be performed under good sanitary conditions; that as few persons saw the patients or were present at the operations as could well be; and that nothing came near them in the shape of contagion or infection. Each patient was treated, in fact, as we should treat and guard a lying-in woman, and to this, more than to anything else, I attribute their success. By care of this kind we may probably diminish this the greatest source of mortality to a considerable extent. The three causes which have been dwelt upon—namely, shock, hæmorrhage, and peritonitis—represent upwards of 75 per cent. of the total deaths after ovariotomy."

ART. 147.—*Further observations on the structure and treatment of Uterine Polypi.* By Dr. ROBERT LEE, Obstetric Physician to St. George's Hospital.

(*Proceedings of Royal Med. and Chir. Soc.*, March 26, 1861.)

Until a recent period the anatomical structure of the different varieties of uterine polypi was imperfectly understood, and at the present time these tumours are confounded by many writers with the malignant or cancerous diseases of the uterus. Fleshy tubercles or fibrous tumours of the uterus were first described by Dr. William Hunter, but it does not appear that he had observed any of those tumours which had passed through the os uteri and become polypi. The similarity of structure between fibrous tumours of the uterus and polypi was first pointed out by Dr. Baillie, and many writers have since inferred that all uterine polypi are fibrous tumours, or, as they are now termed by some, "fibroids" of the uterus. Cancerous fungous tumours of the os and cervix uteri have been described by Dr. Baillie as "another sort of polypus," though an entirely different disease. In a paper on "Fibro-Calcareous Tumours and Polypi of the Uterus," published in the nineteenth volume of the 'Medico-Chirurgical Transactions,' the author states that he described four or five varieties of tumour of the uterus, not cancerous, to which the term polypus had been applied. In a supplement to this paper, published in 1850, he described the arteries and veins which ramify throughout the substance of these tumours. The object of this communication is to state the results of all the cases of uterine polypi which have come under the author's own care, and which he has seen under the care of other practitioners. An abridged history of these cases, reduced into a tabular form, accompanies the paper. In 3 of these 103 cases no operation was performed. In 2 of the remaining 100 cases the polypi disappeared spontaneously. Of the 98 cases which remained 5 died before any attempt had been made to remove the polypi by ligature or any other means. Of the 93 which remained 85 recovered and 8 died. In the first of these fatal cases the patient was insensible and moribund when the ligature was applied by Mr. Perry at the St. Marylebone Infirmary.

This is the first case adduced by a recent writer on the diseases of women to prove that of 20 cases recorded by the author the mortality was usually greater than in lithotomy, placenta prævia, and malignant cholera. In 6 only of the fatal cases, after the application of the ligature, could the death be attributed to the operation. "By an examination of this table of 103 cases of uterine polypi," the author adds in conclusion, "it will be seen that of the last 56 cases which have come under my own care, and in which the operation for the removal of the polypi has been performed by me, not one patient has died. The various methods of treatment adopted in these cases, having been minutely described, do not require to be again detailed."

ART. 148.—*On Fibrous Tumours of the Uterus treated by surgical means.* By Mr. J. BAKER BROWN, Senior Surgeon to the London Surgical Home.

(*Lancet*, March 16, 1861.)

In this paper Mr. Brown relates six cases, which were treated in the same way as the case related in our last volume (XXXII, p. 303), *i. e.*, by gouging out a portion of the tumour. The principal difference between Mr. Brown's plan and that of Dr. Atlee is this—that whereas the latter gentleman makes an incision through the capsule of the tumour, with a view to its detachment, and to second this purpose gives ergot of rye, Mr. Brown aims at the disintegration of the tumour, by cutting into its centre, and breaking it down, thus setting up a process of ulceration, but making no attempt to separate the tumour bodily from the uterine wall. Mr. Brown also holds, that the preliminary division of the os and cervix has in itself the very important advantage of nearly, or quite, arresting the uterine hæmorrhage—the most serious symptom attendant on these tumours.

CASE 1.—*Intra-uterine fibrous tumour, of seven years' duration; operation; cure.*—A. E. E—, æt. 35, unmarried, admitted into the London Surgical Home April 14th, 1859, in a state of great prostration and anæmia, complaining of occasional sickness, pain in the epigastrium, and flooding at intervals of a fortnight, lasting for a week each time. On examination, Mr. Brown found a fibrous tumour, as big as a fist, within the uterus. On the 25th of May, her health being improved, Mr. Brown incised the os uteri, which had the effect of checking the hæmorrhage, except at the menstrual periods (which occurred every three weeks). On October 27th, the patient having been for three months in the country, Mr. Brown gouged a piece out of the tumour. This second operation had the result of breaking up the growth. At every catamenial period she had increased pain, which Mr. Brown ascribed to increased determination of blood to the uterus at these times. This pain and discharge attending the dissolution of the tumour ceased in February, 1860; and on the 21st she was discharged cured. Mr. Brown had heard from this patient that she continues well, takes vigorous exercise, and menstruates regularly both as to time and quantity.

CASE 2.—*Intra-uterine fibro-cystic tumour; operation; relief.*—C. N—, æt. 30, married, admitted into the London Surgical Home May 19th, 1859. Mother of three children. Had suffered from excessive lochial discharge and

frequent hæmorrhages since her first confinement, the latter being abated during the time she was suckling, and recurring when she weaned her child. Two years since the birth of the last child she felt a tumour in the abdomen, which has increased in spite of much medical treatment. On admission she was quite anæmic, the abdomen enlarged, and a leucorrhœal discharge from the uterus. Under tonic treatment, &c., the latter disappeared; but she had a severe attack of hæmorrhage, continuing, in spite of styptic treatment, for nine days.

October 1st.—Left the Home better in health, and menstruating regularly.

May 27th, 1860.—Readmitted; extremely weak, and almost bloodless. During her absence from the Home had been pretty well till February, when she lost at one menstrual period three pints of blood, the hæmorrhage recurring every eight or nine days till readmission. Tonic treatment and generous diet.

July 5th.—Mr. Brown divided the os uteri; the tumour could be felt just inside it. This operation stopped the hæmorrhage, and on the 26th Mr. Brown broke down the tumour with sharp pointed scissors. This had the immediate effect of lessening the tumour, which was passed away in lumps, with an offensive discharge. She had symptoms of pyæmia in August, which readily succumbed to treatment.

Dec. 10th.—She left the Home, the tumour exceedingly diminished, and causing no inconvenience.

Feb. 1861.—Patient in good health, stronger daily, and able to perform her usual home duties. Menstrual discharge very moderate. Since this paper was written, Mr. Brown saw her. She had had a fresh attack of hæmorrhage, and has since been readmitted to the Home.

Case 3.—*Intra-uterine fibrous tumour; operation; death.*—J. M—, æt. 46, unmarried, admitted into the London Surgical Home, November, 1859. Has suffered from fibrous tumour twelve years. It is now the size of a six months' fœtal head, causing great uneasiness, and frequent desire to micturate. On examination, the hymen was found almost imperforate; os and cervix normal.

Nov. 19th.—Mr. Brown operated in the presence of Dr. Hall Davis and Messrs. Charles Mann and P. H. Harper. Mr. Brown divided the os and cervix, and, finding the tumour imbedded in the left side of the uterus as low as the os internum, he cut through the capsule, gouged a piece out, and broke down its tissue. Little hæmorrhage.

20th.—Rigors occurred, pyæmia set in and progressed, pus was effused into the pleura, and the patient died on the tenth day after the operation.

Post-mortem examination showed diffused purulent infiltration. Concerning this case, Mr. Brown remarked that the fatal termination was due to having gouged the tumour at the same time that he incised the os, and in addition to having broken down the hymen. He had determined in future to divide the operation into two stages.

Case 4.—*Intra-uterine fibrous tumour; operation; cure.*—E. B—, æt. 41, married, no children, admitted into the London Surgical Home February 18th, 1860. Had suffered for four years from hæmorrhage and consequent debility. On examination, a fibrous tumour was diagnosed.

Feb. 27th.—The os uteri incised.

May 7th.—The patient having improved in health, which had been indifferent since the last operation, the tumour was freely incised in its centre, and the vagina as usual plugged with oiled lint. There was an

offensive sanguineous discharge for two or three weeks; the tumour gradually diminishing.

June 20th.—Catamenia appeared in nearly normal quantity.

July 7th.—Left the Home.

Mr. Brown had since heard from this patient. She can take exercise without pain or annoyance, and has no return of the hæmorrhage.

Case 5.—Mrs. M—, admitted into the London Surgical Home November 16th, 1860, having been sent to Mr. Brown by Messrs. Alfred Cooper and Paget, of Leicester. Is a widow; had been married eight years and a half; without children. Has lost much blood at each menstrual period during the last five years, but only discovered an enlargement of the womb two years ago. This had increased rapidly during the last few months, and she had suffered from a white, watery discharge after each period.

On examination the uterus was found completely retroverted, the os being so close to the pubes that it could not be reached. Within the uterus a fibrous tumour could be felt as large as a fœtus at the fourth month. There was also distinct fluctuation at the posterior wall of the uterus, arising from accumulation of the menstrual fluid. This showed that the tumour was situated on the anterior wall of the uterus.

Nov. 29th.—Mr. Brown operated in presence of Mr. Paget, Mr. Alfred Cooper, and many other gentlemen. Finding that the os could not be reached, he made an incision in the posterior wall of the uterus, which was very thin, letting out a quantity of fœtid sanguineous fluid. The incision was carefully carried up to the os and towards the fundus, taking care to avoid wounding the peritoneum; and the fibrous mass could now be seen and felt.

Dec. 29th.—The tumour was freely gouged, and consequently greatly diminished.

Jan. 24th, 1861.—The tumour was again gouged, as it had not disappeared rapidly enough. The tumour decreased to half its size, there being much muco-purulent discharge.

Feb. 7th.—Mr. Brown again gouged the tumour, the same results following the operation. He had no doubt the tumour would eventually under treatment disappear entirely.

Case 6.—*Three fibrous tumours; operation; cure.*—E. P—, æt. 37, unmarried. Seven years before, Mr. Brown had removed a fibrous growth from the uterus about the size of a walnut. Two years ago the patient complained of uterine pains and hæmorrhage. A year since, in consultation with Dr. Ferguson, three fibrous tumours had been diagnosed, growing from the inside of the uterus, near to and on each side of the os internum.

Jan. 15th, 1861.—Mr. Brown, assisted by Dr. Cockle and Messrs. Philip Harper and Wratislaw, cut through each of the tumours. A muco-purulent discharge ensued.

Feb. 15th.—On examination two of the three tumours had quite disappeared, and the third was only half its former size. The patient has not suffered from hæmorrhage since the operation.

Art. 149.—*Contributions to the history of Abortions and Uterine Polypi.* By Dr. Rokitansky.

(*Zeitschr. d. Ges. d. Aerzte zu Wien*, No. 33, 1860.)

In making an autopsy of a young female, M. Rokitansky dicovered in the uterus an ovule with extremely curious peculiarities. The

cavity of the uterus was not notably dilated; the mucous membrane was swollen. The neck, on the contrary, was distended and of a globular form; its volume was almost double that of the body; it contained a rounded sac, reddish-blue, fluctuating, and measuring two inches in diameter. This was suspended by a pedicle implanted on the anterior wall of the uterus, a little above the internal orifice. This pedicle was composed of hypertrophied mucous membrane. The uterine caducous coat had ruptured around the pedicle and formed at its junction with the ovule a species of ring. The ovule was composed of the normal elements. It was covered by the decidua reflexa, which presented inferiorly a circumscribed mortification extending equally into the whole thickness of the chorion. This was thin at its inferior part, but quite thick near the pedicle; it was ecchymosed throughout. The internal face was covered with a delicate amnion, which inclosed in its cavity an embryo an inch in length. The external surface of the ovule was surrounded by a very thin albuminous layer; it had not any connection with the internal face of the uterine neck, from which it was separated by clots of blood and a bloody liquid. The mucous membrane of the neck was much congested, reddish-blue, rough, and covered with a whitish, thickened epithelium. The vagina contained also clots and a bloody liquid.

M. Rokitansky made a similar observation in another case, only the embryo had disappeared. He interprets these facts in this way:—The egg has naturally contracted its adhesions to the mucous membrane which has furnished the normal covering. Then it has been displaced, and has descended into the cavity of the neck, where it has been developed. The displacement has been accompanied with considerable hypertrophy of mucous membrane of the wall where the ovule was grafted, and thus the pedicle was formed.

It is scarcely possible to determine truly the causes which have produced the displacement. It is most probable that it has been induced by uterine contractions, shortly after the affixing of the ovule; the pedicle then was the result of the sudden drawing upon the membrane. The subsequent development in the neck was a true secondary cervical pregnancy, producing a mechanical dilatation of the part.

The displacement was the commencement of an abortion, which would go on gradually, finally ending in hæmorrhage.

It also shows by the mortification, that the fœtal envelopes may be perforated and the embryo expelled, while its appendages remain either wholly or partially *in situ*. Then the clots upon such an interrupted pregnancy may finish by forming what is called a fibrous polypus. According to Kiwisch, they are accompanied by profuse metrorrhagia and intense uterine pains for a variable time. He considers this explanation of the formation of such polypi as admissible.

ART. 150.—*A rare termination of an Uterine Fibroid.* By Dr. E. LUMPE.

(*Zeitschr. d. Ges. d. Aerzte zu Wien*, No. 29, 1860; and *Med.-Chir. Rev.*, Jan., 1861.)

Dr. Lumpe records an interesting example of the spontaneous cure of an uterine-fibroid by calcareous degeneration, disintegration, and discharge. A woman who married in her thirty-first year, had two abortions at an early period of pregnancy, and then menorrhagia. Soon after the first abortion she experienced pains in the pelvis, and perceived a tumour the size of an egg. This enlarged very slowly but gradually. In 1856 the repeated uterine hæmorrhages had produced an alarming degree of anæmia. She was at this step seen by Dr. Lumpe, who ordered quinine and iron. The metrorrhagia was subdued for a time; but returned with profusion in the summer of 1858. In June, 1859, a frightful hæmorrhage occurred. Dr. Lumpe then found a fibroid tumour growing in the fundus uteri of the size of a man's head, moveable, but little sensitive, of firm consistence, even-shaped, and without fluctuation. The hæmorrhages now began to subside; and the left foot began to swell, the urinary secretion to diminish, and after a pause of five weeks there was discharged several times daily a sero-purulent, offensive, organic detritus. This continued almost without intermission for four months.

The œdema of the left leg had nearly quite disappeared concurrently with a copious secretion of urine and spontaneous diarrhœa. But a few weeks later the œdema reappeared, not alone in both feet, but also in the face, back, and hands, and lasted till October. Then extreme anæmia, with irritative fever and progressive emaciation, followed, so that life seemed in imminent danger. Suddenly a complete revolution took place; appetite, sleep, returned; the foul discharge diminished, and a normal menstruation appeared in December, 1859. In the mean time the fibroid tumour had shrunk gradually, so that the segment projecting in the abdomen hardly reached two fingers' breadth above the symphysis. Before this period there had set in a copious discharge of calcareous concretions of various sizes. These the patient had washed, and formed a considerable collection. This continued over the successive menstrual periods, the diminution of the tumour proceeding. On the 21st June, 1860, when the last examination was made, the remains of the tumour sat like a cap on the fundus of the uterus. Dr. Lumpe makes several speculations as to the nature of the changes which attended the involution of the tumour.

ART. 151.—*On the use of Pessaries.* By Dr. PEASLEE and others.

(*Amer. Med. Times*, Nos. 22 and 23, 1860.)

The subject of the treatment of uterine affections by means of mechanical appliances having come before the New York Academy of Medicine, Dr. Peaslee said that there were three points to be considered:—1. Are such applications ever required? 2. In what

cases are they called for? and, 3. Which are the best instruments? 1st. The discussion must be confined to instruments applied *per vaginam;* for although those termed utero-abdominal supporters may support the muscles of the abdomen, they can never either reduce a displaced uterus, or retain it in place if reduced. As to the desirableness of using the pessary, Dr. Peaslee would as soon dispense with the use of splints in treating fractures, as he would dispense with it in treating displacements of the uterus. 2d. In some cases of prolapsus in the first degree, entire relief is instantaneously obtained by its first application. In inversion of the uterus, it should not be used, as a general rule, until re-position has been completely effected. "Do not misunderstand me to say that all cases of either of these kinds of displacement require its use. I only say that cases occur of each which I could not conscientiously treat without it. There are cases which give no symptoms at all, and therefore require no treatment. Some of these, however, finally produce serious constitutional symptoms; and, for this reason, at length require treatment. Some also produce sterility. There are many cases, also, which may be treated by astringents in the recumbent posture, others still in which the displacement is due to inflammation and congestion of the uterus. Still, there remains a class of cases which I could not consider myself justified as treating without the aid of the pessary. It is objected to pessaries, that they distend the upper extremity of the vagina, and thus serve to perpetuate any relaxation that may previously exist there. The instrument should, however, at first be as small as will answer the purpose, and another, still smaller, should be substituted as soon as the latter will accomplish the object; and so on until no instrument is required. And here I should remark, that we are generally inclined to apply unnecessarily large instruments to begin with. Pessaries are said to produce inflammation of the vagina and uterus, a result which I have never seen when they have been applied in a proper manner, and under proper circumstances. I should make it a rule never to apply them as long as there is any inflammation or congestion of vagina, uterus, or ovaries." 3d. As to the form of the pessary, each kind may have its advantages. Dr. Meigs makes a very general use of the *globe pessary;* but Dr. Peaslee restricts it more especially to the cases in which the uterus becomes fixed, whether by adhesion or otherwise. "In cases of this kind, and especially of prolapsus in the second degree, with immobility of the uterus, I have found the *globe pessary* of great service. If one be introduced into the vagina so as to protrude slightly, it will in some cases, within twenty-four hours, become inclosed in the canal, and thus elevate the uterus to the normal position. The *stem-pessary* I should restrict to the treatment of prolapsus where the uterus is forced downwards by either an intra-uterine or extra-uterine tumour, and in which no other instrument would be found sufficient to support the organ. The *annular* or *ring-pessary* is found useful in a great diversity of cases. It may be made with a variety of substances, but I prefer that made with a watch-spring covered by gutta percha, or that made of pure tin. The former can be used of a circular or elliptical form, though it

cannot be bent in its original plane. The latter being flexible, and yet sufficiently firm, can be applied in a great variety of forms, and thus be adapted to a great diversity of cases." Dr. Peaslee next observes that, although a pessary may entirely remove the symptoms in many cases of anterior and posterior displacement, the radical treatment of these (which is, however, only called for in very few cases) can only be accomplished by the uterine sound; and he thus describes a simple instrument which he has found very useful in anteflexion:—"It consists of a tube, three sixteenths of an inch in diameter, and about three inches long, passing through two hollow bulbs, all of pure silver. The uppermost of these bulbs is about three quarters of an inch in diameter, and the part above it is the stem, or intra-uterine, portion of the instrument. The other bulb is of similar construction, and about one inch in diameter, placed at the upper end of the tube, about three quarters of an inch from the above mentioned. The instrument is introduced upon a staff, which is then withdrawn. When introduced, the os uteri rests upon the upper bulb, while the lower one rests upon the posterior wall of the vagina. It might be supposed, that so simple an instrument would fall out of the canal, but this is not found to be the case in practice, the walls of the vagina closing around the lower bulb and between the two bulbs. It can be used only in cases in which the vagina is still narrow and retains its tonicity, and in these conditions it may also answer a good purpose in retroflexion. I have never seen any severe symptoms produced by the use of this instrument, and I have had patients wear it for four months."

Dr. Marion Sims agreed with Dr. Peaslee in his appreciation of the value of pessaries, believing the tin annular one devised by himself to be the best, as by its flexibility it admits of adaptation to a great variety of cases. Each case should be made a study in itself, and have an instrument accurately adapted to its indications.

Dr. Gardner was quite at issue with the preceding speakers. First, he believes that the utero-abdominal supporters are of real efficacy, by taking off the weight of the pendulous abdomen and superincumbent viscera, and thus allowing the uterus to resume its normal position; secondly, he totally disapproves of the use of the pessary, as both theoretically and practically wrong. It is an attempt to relieve the mere effect without attacking the cause, whether this consist in a laxity of the uterine ligaments or the uterine walls, or in an abnormal increase of the weight of the uterus itself. Practically, pessaries act frequently as irritating foreign bodies, giving rise to leucorrhœa, abortion, hæmorrhage, constipation, and sometimes to more serious evils, as ulcerations. Considered as harmless, they are inserted, and the patient, unprovided with proper cautions, is perhaps lost sight of. Dr. Gardner cited several cases in proof of these statements, in one of which the pessary had led to complete dilatation of the os uteri and its own impaction within its lips. As to the *stem pessary* employed by Simpson, Valleix, and others in deviations of the uterus, the best modification of which is that of Dr. Peaslee, Dr. Gardner cannot but regard it as an exploded instrument.

"The uterine deviation is either acute or chronic. When acute, the result of any accident, the uterine sound should be introduced into the cavity, or one finger into the vagina and another into the rectum, according to its character, and then, it being easily restored to its normal position, with a few days' rest the patient is cured. But if it is chronic, it may have been the neglected result of accident, or the woman married early, before the organ had attained its full dimensions, and it had been displaced by vigorous coition; and then there has been inflammation with more or less adhesion, even to a complete binding down of the organ to the parietes of the pelvis; and then the result of the disease is unalterable. If the sound raises it a bit, it falls back again and again as often as repeated, and the introduction and wear of the stem but makes disease where none exists, and the organ returns to its position as soon as the support is removed. In other acute cases we have a flexion or version, the result not of accident but of disease. The uterus has undergone *fatty degeneration* at the point where it has given way; and although it may be forcibly lifted up for weeks or months, it necessarily returns to its position as soon as the support is removed. Flexions of the womb are of little or no importance, save when they are associated with inflammation in its various forms. This we may cure, and this is what we should treat, and afterwards, if there has been no actual disorganization, the uterus may resume its normal situation. . . . I never see any cases of uncomplicated flexion. There are many women, of whom there was never a suspicion that there was any flexion of the uterus, till it was revealed at a post-mortem. It is not a disease, but a result of disease, and it often exists for many years unsuspected, and only becoming discovered when the patient goes to a physician for some complication. The possessor of this malformation is unquestionably predisposed to local disturbances, to inflammation of the uterus, &c., and the physician who examines her, imagines that in discovering a chronic flexion he has found the actual source of all the difficulty. No such thing,—he has found only a 'complication,' aggravated by the abnormal situation of the organ. Now, what is the treatment? Simple enough. Treat the complication, which alone is curable; and as soon as it is relieved, the flexion still remaining, the patient is as well as she can be. I never see any but complicated cases." Adverse as he is to pessaries in general, Dr. Gardner employs one with a small stem, which enters the cervix, not the cavity, of the uterus, for the cure of strictures of the cervix.

Dr. Sims, while surprised at the tenor of Dr. Gardner's remarks on pessaries, endorsed to some extent his statements concerning abdominal supporters, having frequently known these to afford great relief, although they have exerted no influence on the malposition itself. As to the intra-uterine stem-pessary he has had to give it up, owing to the mischievous results which have been occasioned by its becoming displaced. While there are cases of malposition in which mechanical means are not applicable, there are also a great number more or less amenable to treatment, and Dr. Sims related several cases in which by an adaptation of his *ring-pessary* and re-

taining it *in situ* during coition, and until quickening, he has been enabled to secure impregnation and avert abortion. "Dr. Gardner states that he has frequently found inflammation result from the use of pessaries. The reason is simply this, the medical profession has rather extravagant ideas of the capacity of the vagina; nineteen out of twenty selecting at the beginning instruments that are too large. In the great majority of cases they hardly ever require an instrument that is more than two inches and a half in diameter, sometimes two and three-quarters, very rarely three, and sometimes even down to two. It requires a great deal of judgment in the application of the instrument to the peculiarities of the case. If it be too small, it will not afford the necessary support; and if too large it will unavoidably produce mischief. I have over and over again seen the *cul-de-sac* ulcerated almost to the peritoneal cavity, the neck of the bladder almost severed, and other parts of the vagina ulcerated by the pressure of too large instruments. I think that a great feature in regard to the use of pessaries, is to make them so that they will not interfere with coition, and I want here to obtain for the distinguished Dr. Hodge, of Philadelphia, the merit of first demonstrating the practicability of this by the use of his particular pessary, and next for the learned Dr. Meigs, for the use of his ring-pessary. I take to myself no credit for the modification of the Hodge pessary or the Meigs' ring. I only claim to have cheapened the instrument. One of Hodge's pessaries costing from five to seven dollars, one of Meigs' gutta-percha rings costing a dollar, while the block tin instrument costs about eighteen cents; and can be moulded to the desired shape, to fit the peculiarity of the individual case, and is as innocuous as gold itself. One other point. The patient should always be instructed in the use of the instrument; she should be made as familiar with its application and removal as with putting on her glove; and I respectfully insist that no woman should ever be sent off to a distance to wear a pessary for an indefinite time. I have seen great mischief result from this, and I do most heartily protest against it."

Art. 152.—*The Pessary a hurtful remedial agent.* By Dr. W. M. Turner, of Petersburg, Virginia.

(*American Medical Times*, Dec. 22, 1860.)

The only cases in which Dr. Turner regards the pessary as proper, are those in which *complete* prolapsus has occurred, the ligaments being so lax as to permit the uterus to protrude through the genital fissures. Even here, he regards it as exchanging vaginitis for metritis. His objections to this instrument are that it presses on the vagina and occasions in[illegible] and ulceration, often resulting in fistulæ; it is unsound [illegible] practice to treat effect instead of cause; or rather it i[illegible] to give tone to the ligaments of the uterus and vagina; [illegible]nce arising from the adjustment of the pessary, gettin[illegible] size, cleansing it, and the disgust it produces in [illegible] woman. He seems to prefer suppository [illegible] injections into the vagina,

and absolute, continued rest in the horizontal position, with the pelvis elevated. He has found, as a substitute for the pessary, sponge of a cylindrical form, about four inches in length, to act very well. This is saturated in a strong decoction of red-oak bark, and placed in the vagina by means of the speculum. This acts as a pessary in a measure, and does not press on any particular point of the vagina, and is an excellent means of applying a local astringent. It should be removed daily and cleansed.

His treatment for all malpositions of the womb is the use of tonics, rest, astringent injections and a proper suspensory bandage. The latter may be made of calico or muslin, and should be of a triangular shape, two sides of the triangle being curved to fit the abdomen; to the angles, tapes are attached. He always suggests, when patients are walking about, that the hoop skirt should be supported by straps over the shoulders, so that the superincumbent mass of clothing may not drag around the waist.

(c) CONCERNING DISEASES OF CHILDREN.

ART. 153.—*Errors respecting Dentition.* By Dr. JACOBI.

(*American Med. Times*, No. 23, 1860.)

The following observations are introductory to a series of sound, common-sense lectures, which Dr. Jacobi has recently delivered on "dentition and its derangements."

"You know," says Dr. Jacobi, "that, among the public at large, even among the educated portion of the community, teething is regarded as one of the two scape-goats of all diseases of infantile age. Teething and worms are among matters acknowledged as the universal and all-powerful sources of disease. Whenever an innocent ascaris or puny oxyasis is observed in the fæces of a child, worms are, for years to come, considered as the undoubted cause of any disease that may occur. Teething, a normal, physiological development, taking place at an age which, for many reasons, is subject to a large number of diseases, has a strong hold on frightened maternal minds. The first dentition generally occupies the first two years of infantile life, a period in which the child is peculiarly liable to diseases both numerous and frequently dangerous. As the protrusion of a tooth (and, on the average, a tooth will cut every month) is a remarkable phenomenon, and is something new and visible, it is believed to be the cause of every unfavorable occurrence in early life. A mother will bring to you her child, thin, emaciated and anæmic, with sunken eyes and the wrinkled physiognomy of old age, and tell you that she is well aware the poor thing is suffering from teething, and that, therefore, nothing can be done to alleviate its sufferings. She will never be convinced that the child is dying from her own neglect; but she has allowed a slight catarrh of the intestines, perhaps, to degenerate into incurable follicular ulceration. Teething is thus considered the most efficient cause of

most of the terrible diseases which prove fatal to thousands of the rising generation. I can assure you that the readiness to attribute all the diseases of infantile life to teething has destroyed more human beings than many of the wars described in history. For, though parents are so much impressed with the belief of the dangers of teething, still they never think of attempting to save the lives of their children by counteracting the supposed life-endangering power of a normal process.

"What is now the belief of the public has been the conviction of the Medical world through centuries down to the present time. General experience shows that the persuasion of the scientific world, after having been given up to make room for more correct opinions, has remained in the public at large, and it is to be feared that it will not soon be removed. And it would be fortunate if the prejudice were confined to the public. But, unfortunately, it still lingers in the medical profession, and it is for this reason that I have dwelt upon it thus lengthily. Nothing is more common than to hear doctors, young and old, in cases of infantile disease, diagnosticate 'teething,' after mother and nurse have done so before; and nothing is more frequent than to be told that the death of a child was the consequence of dentition. I have seen in this city (New York) a certificate of death in which the direct cause of the death of a child five years of age, with his jaws full of teeth, was stated to be 'teething.' Consider for a moment the absurdity of the conclusion, that a normal, physiological process is fatal to the existence of a living being! Who has ever ventured to assert that menstruation, pregnancy, or the climacteric years are the direct causes of death? It is equally absurd to assert it of dentition; and yet such statements are daily made by physicians. According to the census of England for 1857, there were in the United Kingdom (England alone) 3992 deaths from teething, 3791 of which occurred in children of less than two years, and 201 in children from two to five. Between 1845 and 1850, no less than 3466 infants are reported to have died in London from teething, and the disorders caused by the general irritation attending dentition—the number of deaths from all causes being 258,271, giving the proportion of 1 death from teething to 74 from all causes. In the State of New York there died 626 children from teething in 1855; but it is not stated whether a part of these unfortunate children had not the full contingent of teeth of the first dentition."

After adverting to the graver symptoms sometimes met with during dentition, Dr. Jacobi continues:—"In a certain number vomiting will stop, but the diarrhœa continnes. The deluded mother, who felt a little uneasy at the severe character which teething seemed to have assumed, is gratified, after the main symptoms have passed by, to find that her child is suffering from diarrhœa only, and that, in this manner, teething will be made easy and comfortable. But, alas! this deception on the part of the mother is too often fatal to the child. The diarrhœa is allowed to go on for days and weary weeks; the digestion becomes hopelessly destroyed, the abdomen immensely distended with gas, the mesenteric glands swollen and impermeable

to chyme, the catarrh and over-secretion of the glandular follicles of the intestine lead to deep ulcerations of the intestinal canal, the diarrhœa becomes also more frequent, serous, mucous, or bloody, the arms and legs of the little sufferer dwindle away, and the countenance becomes emaciated and senile. The scene closes with a consoling certificate from some doctor or druggist, affirming that teething was the cause of death. Thus 'millions' of infants are destroyed by ignorant, prejudiced, and incorrigible advisers. I say incorrigible. I know that mothers will always consult their prejudices first, the prejudices of their neighbours next, perhaps, at some later time, common sense, and finally they may seek the advice of an educated medical man. I know that a mother who has consigned a beloved child to the grave, will repeat the follies which cost her the child she has lost. If you remonstrate with her for neglecting the second as she did the first, she will reply, Was not the child teething? Would you prevent it teething naturally? Was it her fault that the child got teeth with difficulty? The true inference would be, that nature neglected much, and that it was greatly at fault in the matter of dentition. I once read a newspaper announcement of the death of a child, in which the parents affirmed that 'the Lord had hauled the dear child up to heaven by the teeth.' Now, in this case, neither the father nor the mother was at fault. . . . It will better answer my design to give you a sketch of what dentition is anatomically and physiologically, in order to show clearly the normal and abnormal course it may take. I shall thus be able to explain and limit the numberless complaints generally attributed to it. If I can relieve your minds of the impression, that dentition destroys thousands, and even tens of thousands, of innocent beings, who are yearly sacrificed, in reality, to the prejudices of other times, I shall be abundantly satisfied."

ART. 154.—*An evil arising from the administration of Spoon-meat to Children at the Breast.* By M. DUBOIS.

(*Jour. of Pract. Med. and Surgery*, April, 1861.)

Commenting upon the fact that a new-born infant in one of M. Dubois' wards, passed green motions every morning, and yellow natural motions every evening, the editor of the 'Journal of Practical Medicine and Surgery' proceeds to say, "this fact is one of daily occurrence in the lying-in hospital, and is referable to mixed alimentation. An infant is during the day nursed by its mother, and passes yellow and homogenous excrement. At night a more or less adulterated milk is administered liberally with the sucking-bottle to prevent its crying. In the morning the motions are green, colic is present, and the anus red. This returns regularly day after day, and often induces fatal enteritis. In hospital the number of wet-nurses is too small, a circumstance accounting for the defective feeding, which M. Dubois has often noticed and regretted; but the same circumstance is likewise observed, from other reasons, in private practice. The opinion is too generally prevalent that

children may be brought up by hand as well as at the breast; this method may sometimes, it is true, be successful, but only in families in an easy position, or under quite exceptional hygienic circumstances.

"You will be consulted by parents who for various motives, suckle a child, but with the assistance of the spoon or the sucking-bottle. This is a bad system. If the breast be not the only, it should be the principal source from which the child derives its sustenance. This is a very serious and important matter, and it should never be forgotten that the most carefully conducted artificial feeding can never be equivalent to natural lactation, even when the latter is inadequate."

ART. 155.—*On Albuminoid Disease.*

By Dr. JENNER, Physician to University College Hospital, &c.

(*Medical Times and Gazette*, Dec. 8, 1860.)

Dr. Jenner's object in the present communication is to illustrate the symptoms and pathological appearance of albuminoid infiltration of the spleen, lymphatic glands, &c., in children, by detailing cases. "The uniformity of symptoms," says Dr. Jenner, "and of the lesions of structure found after death, in all the fatal cases which have come under my observation, is remarkable; and when the symptoms in the not-fatal cases are compared with those present in the fatal cases, no reasonable doubt can be entertained that the same lesions of structure were present in both." We give the first case in illustration:

CASE 1.—William F. B—, æt. one year and one month, a fair-skinned child, with light hair and eyes. Parents in decent circumstances, formerly well off; reside in an open situation, viz., the Caledonian-road.

Mother and her family.—Mother æt. 35, delicate, has never suffered from hæmoptysis or other sign of phthisis; has been married twelve years, and during that time has had seven children; had syphilis when pregnant with her first child; the catamenia have always appeared, at regular intervals, during the whole time of suckling. Her own family, in all its branches, very healthy.

Father and his family.—Father æt. 33, healthy. He is said to have lost a brother and a sister, from consumption.

Other children.—The fourth child died at the age of five months, from inflammation of the lungs and diarrhœa. Six children living, of which William is the youngest; the ages of the five are respectively—eleven years, nine years, seven years, four years, and three years. Of these, the three eldest never showed signs of rickets—the two youngest are rickety. None of the children have suffered from "bad eyes" or from eruptions on the skin. William had for some months no other food than his mother's milk; then bread and cow-milk were added. When he came under observation he was still at the breast.

The following were the first notes, made September, 1859. Extreme emaciation; never walked; cannot sit up on the floor; cries when moved; is evidently very tender. Has now been undressed and shrieked much, the mother says, "It is that, *i.e.* the tenderness, which makes him cry so." Per-

spires freely about the head and face, especially at night, the mother says "the perspiration is dreadful," cries much at night, and kicks off the bed-clothes. Four incisor teeth.

Head hot. Two months since it was, according to the mother, "dreadfully hot." Forehead projects; antero-posterior diameter of the head very great. Anterior fontanelle widely open, neither depressed nor elevated. Exceedingly irritable in temper.

Abdomen large, globular, tympanitic generally.

Bowels now relaxed; stools very offensive, watery; at times the stools are formed, and then are not offensive.

Spleen very large, moveable, reaches nearly to the crest of the ilium, but not so far inward as the umbilicus. Anterior border, oblique, hard, and sharp; posterior border, perceptible to touch.

Liver reaches nearly to the umbilicus; inferior border too easily perceptible by touch.

Lymphatic glands in groins, axillæ, and neck, vary in size from small shots to small peas; very hard, round, moveable.

Chest, the deformity of the thorax characteristic of rickets, very great; the lateral groove, very deep; the antero-posterior diameter during inspiration, five inches and three quarters; the lateral diameter at the point of greatest depression, three and a half inches during inspiration; four and a half inches during expiration.

The softening of all the long bones is very decided, the enlargement of the ends of the bones is comparatively trifling. The bones of the forearm, upper arms and thighs are bent, those of the legs are straight.

This boy died February 16, 1860; at that time he was one year and six months old. I saw him repeatedly after the date of the foregoing notes. He was one of the cases brought down to the hospital for the purpose of illustrating rickets and albuminoid infiltration of the spleen, &c., at the time I was lecturing on those subjects.

He continued to emaciate and lose colour; the spleen and glands increased somewhat in size; the chest deformity attained a most extraordinary degree; the tenderness became so great that he could not bear his mother to wash, dress, or even touch him; the weight of the bed-clothes seemed to cause pain.

He continued as long as he lived to sweat profusely over the head. During the latter part of his life the stools were solid, but offensive.

The immediate cause of his death was the mechanical impediment to inspiration offered by the softened ribs. His breathing grew "worse and worse," "everything he drank took away his breath." His mother did not consider him worse than usual for more than a quarter of an hour before his death; then she noticed his breathing was more difficult, still she had no idea he was dying till five minutes before he expired, he then seemed quite unable to "get his breath," and died with a slight convulsive struggle.

The blood was examined microscopically during life, there was no excess of white globules.

The examination of the body was made at the house of the parents.

The head could not be opened.

Emaciation was carried to its utmost limits; the muscles were very pale, flabby, and small.

The chest deformity was extreme.

The anterior margins of the lungs were emphysematous. There was some collapse of the left lung, and extensive collapse of the right lung, quite enough to account for death.

The heart was healthy.

There was no fluid in either pleura.

The peritoneum was healthy, it did not contain any fluid.

The spleen was very large, about four inches in length, and three in breadth. It was free from adhesions. It was firm and tough, its cut surface was smooth, rather pale, mottled red and almost colourless; thin sections could be made with facility, the edges remaining quite sharp; it was remarkably transparent —the more colourless the part the more transparent—no blood oozed from the surface, and only a little red watery fluid was expressible. There was no increase in the size of the splenic corpuscles, and no sago-like masses.

The liver was slightly enlarged, very tough and dark from congestion; when a piece was soaked in water the blood soon escaped, and then a little transparent substance was seen to separate the lobules.

The spleen, liver, and lymphatic glands were tested with iodine and sulphuric acid, none of the reactions characteristic of "amyloid degeneration" could be obtained.

The lymphatic glands were pale and hard, their cut surface pale, smooth, and homogeneous.

The mesenteric glands had the same characters. These latter varied in size from a small shot to a small split-bean.

In the case of William F. B—, the extreme tenderness of the trunk and extremities, the profuse perspiration of the head, the desire to lie cool at night, and the deranged state of the intestinal secretions and functions, were all well marked. These symptoms are proper to rickets, and nowise connected with the albuminoid disease. Death resulted, as it so often does in rickets, from extreme softening of the ribs. At last the softness was such that dilatation of the thorax became impossible. Five months before William F. B— died, it will be noted, that at each contraction of his diaphragm the softened ribs were pressed so far inwards by the weight of the atmosphere, that the lateral diameter of the thorax was diminished to three and a half inches; when the lungs were compressed, preparatory to the expiratory act, the diameter at the same part increased to four and a quarter inches, thus affording a good illustration of the power of the expiratory efforts by forcing air from one part of the lung to another to distend the soft parts of the thorax. After death the extent of the pulmonary collapse indicated clearly the mechanical defection that existed during life in the apparatus for increasing the capacity of the thorax. The least obstruction to the entrance of air afforded by the presence of a little mucus in the bronchial tubes, sufficed to cause collapse of lung-tissue. No air could be drawn beyond, from defect of inspiratory power, and the mucus consequently could not be coughed out.

Art. 156.—*On a previously unobserved preventible cause of Idiocy, Imbecility, and the allied affections.* By Mr. Thomas Ballard.

(*Proceed. of Royal Med. and Chir. Society*, April 23, 1861.)

In a work recently published, entitled 'A New and Rational Explanation of the Diseases peculiar to Infants and Mothers,' the author endeavours to show that "the exercise of the instinctive act of sucking under circumstances unfavorable to the infant obtaining food is a principal source of disease to infants and puerperal women;" the result of this fruitless sucking being an excessive reflex secretion of gastric and intestinal juices, which corrode and soften the mucous coat of the intestinal canal, thus severely injuring the digestive

powers, and consequently preventing the proper growth and nutrition of the various tissues of the body. The frequent and green stools which sucking infants so frequently are the subjects of are the evidence of this process of injury to the intestinal canal being in operation. And thus *fruitless sucking* becomes the chief cause of the developmental diseases of infants and children, and especially of the very pathological conditions which Dr. Guggenbühl has observed to be associated with cretinism.

The author has observed that idiocy is a condition involving many of these morbid phenomena. The histories of all the cases are similar. They have suffered in infancy persistent diarrhœa, succeeded by fits or some form of convulsive disease. A large majority of them bear evidence of long-continued *retained habits* of fruitless sucking in the deformity of the jaws, which is caused by some portion of the hand being placed in the mouth for the purpose of sucking it at a period of life when the bones were soft enough to yield to its pressure. The upper jaw is either forced forward, thus causing the upper teeth to project; or the lower jaw is drawn forward in advance of the upper, constituting the deformity known as "underhung." Sometimes the jaws are not deformed, yet the condition of idiocy is extreme; in such cases either the whole mischief has occurred very early in life, so as to blight the growth of the brain, thus producing an idiot with a small head; or the habit of *fruitless sucking* has been continued under the form of "tongue-sucking." These latter cases add much weight to the present explanation, because the effect upon the intestinal canal is still maintained, the subjects of it having loose evacuations from the bowels, particularly during the night, and the habit being especially practised when in bed. They constitute many of the "dirty patients" in asylums. In addition to the deformity of the jaws, the defective condition of the incisor teeth is another evidence of fruitless sucking stamped upon the idiot; it results from the irritation to which the corresponding portion of the mucous membrane of the mouth is subjected during their development.

The sources of fruitless sucking to which infants are very frequently subjected, and from which the *retained habits* above mentioned are acquired, are three in number—namely:

1. The mother's breast, when it does not yield as much milk as the infant requires.

2. The "sugar teat," which is frequently placed in the child's mouth by the nurse to keep it quiet. This is probably much practised on the continent, where idiocy is very common.

3. The prevalent custom of feeding infants through artificial teats which collapse under the pressure which is necessarily exercised upon them in the act of sucking.

The author states his conviction, that the various forms of convulsive disorders of infants are not dependent upon excentric causes—such as teething and worms, but that they are really the evidence of cerebral disease, in all probability some degree of œdema, giving rise to congestion and pressure; and that their treatment by hot baths, emetics, purgatives, lancing the gums, &c., is not the

most conducive to a perfect recovery. The only effectual mode of treatment is to abstract blood, either by leeches applied to the temple, or from the external jugular vein by venesection, according to the urgency of the symptoms. To the neglect of this plan of treatment many cases of idiocy and of death are attributable. If *fruitless sucking* is arrested, and the head symptoms are thus treated, cases of threatened idiocy may be averted. The most important indication for the abstraction of blood is the occurrence of vomiting, especially during sleep; much mischief occurs to children, and many feeble intellects result, from the wrong interpretation of this symptom. The fundamental and most important point is to direct the attention of parents to the *mode* of administration of food. The kind of food best adapted for infants is sufficiently obvious. If the infant can obtain its food without excessive sucking, it is not subject to diarrhœa, growth and development progress properly, fits and convulsions do not occur, and habits of fruitless sucking are not acquired. The author believes that if this point could be generally understood, not only would the Registrar-General's reports show a great diminution of infantile mortality, but the physical and mental development of future generations would be much improved.

ART. 157.—*On Iritis as it occurs in Syphilitic Infants.* By Mr. J. HUTCHINSON, Assistant-Surgeon to the London Hospital.

(*Medical Times and Gazette*, Nov. 17, 1860.)

This infrequent but destructive and insidious disease has either been greatly overlooked, or its study has been neglected by the profession at large, and it is with a view to add to our correct knowledge upon the subject that Mr. Hutchinson has collected into a tabular statement all the examples of hereditary syphilitic iritis which he has been able to find recorded. After a careful search through the journals and elsewhere, he has discovered but twenty-one cases, and from the series he deduces the following conclusions:

1. That the subjects of infantile iritis are much more frequently of the female than of the male sex, as shown by the fact of fourteen of the infants being girls and five boys. In two cases no information is given of the sex.

2. That syphilitic infants are most liable to suffer from iritis at about the age of five months. The youngest patient was seven weeks of age; the oldest, sixteen months.

3. That syphilitic iritis in infants is often symmetrical, but quite as frequently not so. In nine cases of the series both eyes were affected, and in eleven the inflammation was limited to one; but in the latter class it is quite probable that the other eye suffered subsequently.

4. That iritis, as it occurs in infants, is seldom complicated, and is attended by but few of the more severe symptoms which characterise the disease in the adult. Sclerotic congestion and pain were absent in more than one half the cases, and in but very few was there any marked photophobia, or haziness of the cornea.

5. Notwithstanding the ill-characterised phenomena of acute inflammation, the effusion of lymph is usually very free, and the danger of occlusion of the pupil great.

6. Mercurial treatment is most signally efficacious in curing the disease, and, if recent, in procuring the complete absorption of the effused lymph. In all cases where this remedy had a fair chance, the disease promptly yielded to it.

7. Mercurial treatment previously adopted does not prevent the occurrence of this form of iritis.

8. The subjects of infantile iritis, though often puny and cachectic, are also often apparently in good health; showing that the more ill-nourished are not the most prone to be attacked.

9. That infants suffering from iritis almost always show one or other of the well-recognised symptoms of hereditary taint. In two instances only were there no other specific symptoms of constitutional taint; but in the remaining cases, the following symptoms were present at the outbreak of iritis: Psoriasis of the general surface in nine cases; a papular rash in two; psoriasis palmaris in one; erythema marginatum in two; peeling of the skin in one; falling of the eyelashes and tinea tarsi in two; snuffles in ten; sore mouth and aphthæ in four; and condylomata of the anus in five.

10. Most of those who suffer from syphilitic iritis are infants born within a short period of the date of the primary disease in their parents. "In one instance the mother had contracted primary syphilis from her husband only three months before the birth of the infant. In another, the interval was four, and in a third, six months. In five, about a year had probably elapsed; and in another five, at least two years. In two, judging by the fact that the mother had previously borne a number of children, some of which had died with suspicious symptoms, the date of the original disease in the father could not be placed nearer than six or seven years. This calculation quite accords with what is observed in the iritis of adults, which, in a great majority of instances, is a secondary—and not a tertiary—symptom."

ART. 158.—*Congenital Phymosis considered as a frequent cause of irritation of the urinary organs in young children.* By Mr. PRICE, Surgeon to the Great Northern Hospital.

(*British Med. Jour.*, April 20, 1861.)

Congenital phymosis is as yet scarcely recognised as a cause of vesical irritation in children. Sir Charles Bell has alluded to incontinence of urine in boys, but has failed to notice the cause. The subject has also been passed over in silence by Guthrie, Canton, &c., and alluded to only in a cursory manner by Gross. Mr. Coulson, however, had described cases in children in which the symptoms of calculus were present, and were removed by the cure of a congenital phymosis. The connexion has also been recognised by a few other surgeons.

The most common results of congenital phymosis in young children are the following:

1. Preputial obstruction to the flow of urine, and the more or less permanent retention of this secretion. The tightness of the prepuce, and the retained secretion of Tyson's glands, may produce irritability of the bladder; the urine, however, being discharged from the urethra more rapidly than it can escape from the narrow orifice of the prepuce, is retained between the latter and the glans, and may give rise to inflammation, and even to extravasation. The only remedy for this condition is to slit up the prepuce, so as to allow the pent-up urine to escape.

2. Constant irritation of the glans penis and urethra is one of the most usual results. This may be so intense, as to give rise to severe constitutional derangement, even in otherwise healthy children: and Mr. Price had seen a case in which the mental as well as the bodily health was affected.

3. Vesical irritation, accompanied with incontinence or retention of urine, is probably produced by reflex irritation. Incontinence of urine most frequently occurs, and is very obstinate, unless the cause be recognised. In retention, which is not uncommon, the difficulty is increased by the child's pulling the prepuce. The use of a catheter is seldom or never necessary, but the warm bath is serviceable in removing the temporary difficulty.

4. Congenital phymosis sometimes gives rise to hypertrophy of the muscular coat of the bladder, associated with symptoms bearing a close analogy to those of catarrh and calculus vesicæ. So analogous are the symptoms to those of stone, that Mr. Price has known boys with congenital phymosis to be on the point of having lithotomy performed on them.

5. Pain and swelling of the testis have also been observed to attend congenital phymosis.

It is scarcely the mere elongation of the prepuce that produces the mischiefs here described. It will generally be found that the mucous membrane of the foreskin is more or less adherent to the glans; and that it is this, and the retention of the secretion of Tyson's glands, which usually produce the irritation. More than one modern writer has said that slitting up and cutting off a portion of the prepuce is not sufficient, and has therefore recommended subcutaneous section of the mucous membrane. The only plan, however, of curing the phymosis, is to slit up the prepuce, cut away a portion, remove the adhesions, and stitch together the cut edges of the skin and mucous membrane. Mr. Price then describes the operation which he usually performs.

The prepuce being put on the stretch, so as to remove the orifice as far as possible from the glans, the blunt-pointed blade of a pair of scissors is passed through the preputial orifice to about a quarter to half an inch towards the corona glandis, and the prepuce is divided through its upper surface. This allows the glans to be seen covered, in all probability, especially if the phymosis be congenital, by the mucous membrane of the foreskin, which will be found more or less tightly adherent to the glans. The scissors being laid aside,

this adhesion is to be separated by somewhat forcibly retracting the back portion of the prepuce, and, by means of the thumb-nail, breaking through such points as may be more than usually firm. Around the fossa, in front of the corona glandis, will usually be found small patches or masses of hardened and otherwise altered secretion of the odoriferous glands. These being removed, the scissors must be again employed, and such portions of the redundant skin and mucous membrane cut away as will allow the glans penis, after the edges of the wound are united, to remain uncovered. In removing the necessary portions of integument, the author generally contrived, by shaping the incision somewhat obliquely from above downwards, to avoid wounding the artery of the frænum, whereby there is little risk of secondary hæmorrhage and infiltration of the loose tissue with blood—a result which he had frequently known to prove troublesome, and, for a considerable time, to retard the healing process. If, however, it be desirable to loosen the connexions of the mucous membrane with the glans at the frænum, instead of dividing the little artery which runs in this position, it is better to separate with the scissors the union of the frænum with the glans immediately in the line of junction, by which means the course of the vessel will be avoided. Mr. Price, although some authors do not follow the practice, is in the habit of keeping the mucous and cutaneous surfaces in contact by sutures, unless the patient, on whom the operation is performed, be very young. Sutures of the very finest silk are to be preferred to those in ordinary use, and made either of the same material or of metal, as they cause less irritation, and do not need removal ere their destruction is effected in the course of a few days, by reason of the contact of the healing or other discharge. To prevent the urine for the first few hours after the operation from excoriating the edges of the wound, it is advisable to smear them with oil or cerate.

In performing such an operation less danger will be run of wounding the glans penis, a result which the author has known to occur when the bistoury has been used. It must be recollected that to obtain complete relief from a congenital phymosis, a mere slitting up of the elongated prepuce will not generally suffice, but a certain portion of the mucous and cutaneous tissues must be removed.



REPORTS

ON THE

PROGRESS OF THE MEDICAL SCIENCES.

January—June, 1861.

'THE intention of the following Reports is to pass in review the principal additions to each department of Medical Science which have been placed on record during the preceding six months. It is not contemplated that they should be confined exclusively to the notice of what is new; any fact or doctrine which may be considered practically useful will, although not strictly novel, be regarded as worthy of commemoration. It must be obvious to all who are aware of the immense mass of information which is almost daily put forth by the medical press of this and other countries, that the notice of every subject would be an impossibility. It therefore devolves upon the writers of each Report to select only such articles for retrospection as may possess superior recommendations, either of an intrinsic character, or in relation to the main end and aim of all medical knowledge—the alleviation of suffering and disease.

I.

REPORT ON MATERIA MEDICA AND THERAPEUTICS.

The Scale of Medicines with which Merchant Vessels are to be furnished, by command of the Privy Council for Trade; with observations on the means of preserving the health of seamen, &c. By Mr. T. Spencer Wells. (Second edition, 16mo, London, Churchill, 1861, pp. 212.)

The present edition of this excellent little work, the author tells us, has been carefully revised. In its present form it is, in fact, a most trustworthy guide for the persons for whom it is intended; and every captain of a vessel which does not carry a surgeon, and every other person who is likely to be thrown upon his own resources in medical matters, ought to have it in his possession.

The Eastern or Turkish Bath; its history, revival in Britain, and application to the purposes of health. By Mr. Erasmus Wilson, F.R.S. (16mo, London, Churchill, 1861, pp. 167.)

Mr. Wilson is an enthusiastic admirer of the Eastern or Turkish bath. In his opinion, it is the one great discovery of the day, not only as a luxury, but as a means for preserving health and preventing and curing disease.

"The sanitary purposes which the bath is calculated to fulfil," says Mr. Wilson, "are three in number, namely—

"1. Preservation of health.

"2. Prevention of disease.

"3. Cure of disease.

"The bath is *preservative of health*, by maintaining a vigorous condition of the body; a state the best suited for the happiness of the individual, as rendering him in the highest degree susceptible of the enjoyment of life; and a state the most advantageous to social interest, as ensuring the highest working condition.

"The bath is *preventive of disease*, by hardening the individual against the effects of variations and vicissitudes of temperature, by giving him power to resist miasmatic and zymotic affections, and by strengthening his system against aberrations of nutrition and the fecund train of ills that follow disturbance of the nutritive functions

—namely, scrofula, consumption, gout, rheumatism; diseases of the digestive organs; cutaneous system; muscular system, including the heart; nervous system, including the brain; and the reproductive system.

"The bath is *a cure for disease* when the latter state is already established, and is a powerful and effective medicine."

In a word, Mr. Wilson writes in a very sanguine spirit—in our opinion, in a spirit far too sanguine. At the same time we are quite prepared, up to a certain point, to believe in the Turkish bath, both as a luxury and as a remedy; and also to recommend Mr. Wilson's account of it to the perusal of our readers.

The Action of Tea and Alcohol contrasted. By Dr. EDWARD SMITH, Assistant-Physician to the Hospital for Consumption at Brompton. ('Dublin Med. Press,' 25th July, 1860.)

Dr. Edward Smith's object in this paper (which was read before the British Association for the Advancement of Science at Oxford, in 1860) is to express in a decided manner the action of these two great classes of substances, in order that their suitability in health and disease may be explained, and data given upon which those may argue who advocate a course opposed to the temperance movement. The author's observations are based upon his own experiments, which have already appeared in the 'Philosophical Transactions' for 1859. He shows, in reference to tea, that it excites all vital transformations; and whilst it increases the frequency, depth, and chemical changes of respiration, it at the same time increases the action of the skin, as shown by the increase of perspiration. Hence it promotes the transformation of food and tissue, and at the same time cools the body. Fat and acids lessen or prevent this action on the skin, whilst alkalies increase it. From such facts he deduces the conditions of system, season, and climate to which tea is applicable, and shows how far such deductions from science correspond with the actual instructive practice of mankind. He shows that it is not applicable in the absence of food, but only when the system is replete with food. It is not fitted for breakfast, nor for those of spare and active habits, nor to certain exertion, nor for those who perspire too freely, nor for prisoners, nor for the ill-fed and the destitute, nor for the young. It is the most fitted for the old, the corpulent, the sedentary, for some forms of deficient accumulation, for soldiers, for hot climates and seasons, unless at the period when, even in these conditions, the skin is too active, and for all conditions in which there is excess of food in relation either to the necessity for it, or to the power to transform it. It is especially fitted to aid in the transformation of starch and fat foods.

He then shows in what respect the action of coffee differs from that of tea—viz., in lessening the action of the skin, and thereby preventing the waste of heat; lessening the necessity for the transformation of food, by acting upon the kidneys, and sometimes upon the bowels. The conditions under which coffee should be taken are, therefore, very

different from those in which tea is applicable, and in practice we do recognise this difference. Coffee lessens the consumption of food, whilst tea increases it; because the former conserves the heat of the body, and the latter disperses it.

The subject of alcohols is fully discussed, and it is shown that the class ought to be broken up, since the members of it contain very different amounts of alcohol; and beers, if not wines, exert their principal action by the elements apart from the alcohol. The author shows that rum acts differently from brandy and gin, and is a true restorative. He states that there are no points of similarity between the actions of tea and spirits, and that the latter were useful in conditions quite opposed to those in which tea is required—viz., where it is desired to lessen the action of the skin, and at the same time to sustain the action of the heart. In these respects, spirits exert a powerful influence; but in a normal condition, in health, all the evidences of their action show that they are poisons and not foods. Beers he thought to be valuable according to the amount of gluten, sugar, acids, and salts, which they contain, and hence that the good old-fashioned English ales, made of malt and hops, are of infinitely greater value than the thin, bitter trash which has become so fashionable under the name of pale or bitter beer. The action which is of real value is the power which genuine ale has, by its gluten and sugar, to promote the transformation of food, as shown by the author's experiments; and thereby the interesting fact is made out, that in this important respect tea and good beer have an analogous action, and hence that there is truth on both sides of the temperance question. Ales, however, have a greater affinity to coffee than to tea, since they lessen the action of the skin, and at the same time they increase the action of the heart. They are also fitted to certain exertions in a far higher degree than tea, and indeed in many respects they are suited to different conditions. The author reprobates the introduction of ales into India, believing that, from their power to lessen the action of the skin, the conditions under which they would be useful are very exceptional. If, however, they withdrew the soldier from the temptations of the raw spirit named arrack, they would be of some service.

The Dietetic and Medicinal Properties of Coca. By Dr. MANTEGAZZA. ('Osterisch. Zeitsch. für Prac. Heilkunde,' Nov., 1859; and 'Pharmac. Journal,' June, 1860.)

The Erythroxlyon coca, a plant which grows in moist and woody regions on the eastern slopes of the Andes, is highly valued by the inhabitants of Peru, Chili, and Bolivia, not only as a medicine, but also as an article of food; and serves with them as a substitute for the tea, coffee, betel, tobacco, haschisch, and opium used by other nations. Its culture, upon which, since the time of Pizarro's conquest, much care has been bestowed, has recently increased to such a degree, that in the year 1856 the revenue of the republic of Bolivia, from the sale of this herb, amounted to 13,000,000 of francs—a very large sum, if compared with the small number of consumers,

(800,000). According to the account of M. Pöppig and of other well-known travellers, the natives use the dried leaves of the coca-plant either by themselves or in combination with a highly alkaline substance called *llipta*, which is prepared from roasted potatoes and the ashes of different other plants; they masticate them like the Malays and the inhabitants of the Indian Archipelago do the calcined leaves of the clavica betel. The use of this masticatory, which is considered a great delicacy, is not, however, confined to the rich; on the contrary, it is particularly among the hard-working Indians that the coca enjoys a high reputation as a nutriment and restorative, and its use is considered absolutely essential for the endurance of fatigue and exertion, so that a labourer in making his contract has a view not only to wages, but to the amount of coca to be furnished. The Inca, who lives at a height of seven to fifteen thousand feet above the level of the sea, and whose meagre fare consists principally of maize, some dried meat, and potatoes of bad quality, believes that he can sustain his strength solely by the use of coca; the porter who carries the mail, and accompanies the traveller over the roughest roads at the quick pace of the mule, invigorates and strengthens himself by chewing coca; the Indian, who works half naked in the silver and quicksilver mines, looks upon this plant as an ambrosia capable of imparting new life, and of stimulating to new exertions. It is not surprising, under such circumstances, that this article should be very much abused, and that the evil of intemperance in the use of coca, known as coquear, should be quite as prevailing among the natives of those districts as intemperance in the use of tobacco, alcoholic liquors, and opium is among other nations. They often intoxicate themselves for several weeks, hide in the deepest forests in order not to be disturbed in their enjoyment, and not rarely return home to their family suffering from delirium or decided idiocy.

The child and the feeble old man seize with equal eagerness the leaves of the wonderful herb, and find in it indemnification for all suffering and misery. Be it that the praised efficacy of the plant is merely the effect of fancy or tradition, or that the plant really contains a powerful principle unknown to science, the solution of this mystery is certainly a worthy theme for scientific inquiry, and the investigations of Dr. Mantegazza deserve, therefore, our full attention.

Dr. Mantegazza observed that the chewing of a drachm of the leaves of the coca increased salivation, giving at first a somewhat bitter, and afterwards an aromatic taste in the mouth, and a feeling of comfort in the stomach, as after a frugal meal eaten with good appetite. After a second and third dose, a slight burning sensation in the mouth and pharynx, and an increase of thirst, were noticed; digestion seemed to be more rapidly performed, and the fæces lost their stercoraceous smell, the peculiar odour of the juice of the coca becoming perceptible in them. On using the coca for several days, the author observed on himself as well as on other individuals a circumscribed erythema, an eruption around the eyelids resembling pityriasis; from time to time a not unpleasant pricking and itching of the skin was felt. An infusion of the leaves, taken internally,

was found to increase the frequency of the pulse in a considerable degree. In making observations on the frequency of the pulse, the author was very careful to consider all the conditions which might influence it; he found that the temperature of the air being the same, and the liquids being heated to an equal degree, an infusion of coca will increase the action of the heart four times its normal standard, while cocoa, tea, coffee, and warm water only double it. By taking an infusion prepared from three drachms of the leaves a feverish condition was produced, with increased heat of the skin, palpitation of the heart, seeing of flashes, headache, and vertigo; the pulse rose from 70 to 134. A peculiar roaring noise in the ear, a desire to run about at large, and an apparent enlargement of the intellectual horizon indicated that the specific influence upon the brain had commenced. A peculiar, hardly describable feeling of increased strength, agility, and impulse to exertion follows; it is the first symptom of the intoxication, which is, however, quite different from the exaltation produced by alcoholics. While the latter manifests itself by increased but irregular action of the muscles, the individual intoxicated by coca feels but a gradually augmented vigour, and a desire to spend this newly acquired strength in active labour. After some time the intellectual sphere participates in this general exaltation, while the sensibility seems to be hardly influenced; the effect is thus quite different from that produced by coffee, and resembles in some degree that of opium. Dr. Mantegazza could, in this excited condition, write with ease and regularity. After he had taken four drachms he was seized with the peculiar feeling of being isolated from the external world, and with an irresistible inclination to gymnastic exercise, so that he who in his normal condition carefully avoided the latter jumped with ease upon the writing-table without breaking the lamp or other objects upon it. After this a state of torpidity came on, accompanied by a feeling of intense comfort—consciousness being all the time perfectly clear—and by an instinctive wish not to move a limb during the whole day, not even a finger. During this sensation sleep sets in, attended by odd and rapidly changing dreams; it may last a whole day without leaving a feeling of debility or indisposition of any kind. The author increased the dose to eighteen drachms in one day; his pulse rose in consequence of it to 134, and in the moment when delirium was most intense, he described his feelings to several of his colleagues, who observed him, in the following written words:—"*Iddio è ingiusto perche ho fatto l' uomo incapace di poter vivere sempre cocheando*" (this is the expression for intoxication by coca). "*Io preferisco una vita di* 10 *anni con coca che un di* 1,000,000 *secoli senza coca.*" After three hours of sleep Dr. Mantegazza recovered completely from this intoxication, and could immediately follow his daily occupation without the least indisposition—on the contrary, even with unusual facility. He had abstained for forty hours from food of any kind, and the meals then taken were very well digested. From this fact, the author finds it explainable that the Indians employed as carriers of the mail are able to do without food for three to four days, provided they are sufficiently supplied with coca.

From these experiments made repeatedly on himself, and on other individuals, Dr. Mantegazza draws the following conclusions:

1. The leaves of the coca, chewed or taken in a weak infusion, have a stimulating effect upon the nerves of the stomach, and thereby facilitate digestion very much. 2. In a large dose coca increases the animal heat, and augments the frequency of the pulse, and consequently of respiration. 3. In a medium dose, three to four drachms, it excites the nervous system in such a manner that the movements of the muscles are made with greater ease—then it produces a calming effect. 4. Used in a large dose it causes delirium, hallucinations, and finally congestion of the brain.

The most prominent property of coca, which is hardly to be found in any other remedy, consists in the exalting effect it produces, calling out the power of the organism without leaving afterwards any sign of debility. The coca is in this respect one of the most powerful nervines and analeptics. These experiments, as well as the circumstance that the natives have used the coca, from the earliest period, as a remedy in dyspepsia, flatulency, and colic, have induced Dr. Mantegazza, and several of his colleagues in South America and Europe, to employ the leaves of the coca in a variety of cases, partly as masticatory, partly in powder as infusion, as alcoholico-aqueous extract in the dose of ten to fifteen grains in pills, and as clyster. Dr. Mantegazza has used coca with most excellent results in dyspepsia, gastralgia, and entralgia; he employed it not less frequently in cases of great debility following typhus fever, scurvy, anæmic conditions, &c., and in hysteria and hypochondriasis, even if the latter had increased to weariness of life. The coca might also be employed with great benefit in mental diseases where some physicians prescribe opium. Of its sedative effect in spinal irritation, idiopathic convulsions, nervous erethism, the author has fully convinced himself. He proposes its use in the highest dose in cases of hydrophobia and tetanus. It is a popular opinion that the coca is a reliable aphrodisiac; the author has, however, observed only two cases in which a decided influence upon the sexual system was perceived.

Dr. Mantegazza finally recommends this remarkable plant, which could be easily introduced into trade, to the profession for further physiological and therapeutical experiments, and adds the full history of eighteen cases by which the medicinal virtues of the remedy are proved to satisfaction.

The Whey and Grape-Cures in Germany and Switzerland in the treatment of Chronic Diseases (*Les Cures de Petit-lait et de Raisin en Allemagne et en Suisse dans la Traitement des Maladies chroniques.* By Dr. Edouard Carrière. (8vo. Paris, Victor Masson, 1860. pp. 260.)

In Germany and Switzerland whey and grapes are making a great sensation as therapeutical agents, and the number of establishments which are devoted to their use is now reckoned by hundreds. In

Germany, in particular, the whey drinking-places are almost as numerous as the water drinking-places; and at many of the latter places the two modes of treatment are combined with considerable advantage to the pocket of the proprietor, whey and water being taken separately or together, according to the fancy of the invalid.

Dr. Carrière's work is a careful account of the whey and grape cures as at present practised in Germany and Switzerland; the first part being devoted to the whey cure, the second part to the grape cure.

1. The whey cure, as practised in the principal establishments, is as follows. In order to measure with precision the quantity exhibited, glasses are used which contain about four ounces of liquid. The first dose is taken fasting, and the second after a quarter of an hour's walking exercise in the open air or under shelter, according to the weather. It is almost indispensable that the whey should have been recently prepared, although in most places excellent precautions are taken to preserve its temperature. The establishments, considered the best, renew their stock three times a day in order to insure its freshness. It is an advantage, not without value, to take the whey on the very spot in which it is prepared, or very near it. If it should come from afar, it is better to drink it at the springs, like a glass of mineral water, than to wait for its distribution. In the early stages of the cure, two glasses are not exceeded; if no obstacle should arise, and no great perturbation of the digestive organs occur, the daily dose may be increased to four or five glasses, equivalent to about one and a half pint of whey. According to Dr. Mojsisovicz, from whom we borrow all these details, this applies to cow's milk-whey only. But for goat's or ewe's milk whey, both less digestible and applicable, especially the latter, to the cure of pulmonary phthisis, it is essential to proceed with greater moderation. Patients labouring under tuberculosis should never take more than three glasses, at intervals of at least half an hour. Two glasses should be drunk in the morning fasting, the third towards the middle of the day. It is not however possible to lay down absolute limits on this point. In consumptive cases especially, it would be difficult to establish beforehand how the cure is to be continued after the first days. The practitioner must, in the first place study his patient, and then act according to the symptoms and complications which may arise; but he must especially not allow himself to be discouraged. Whey is not one of those remedies, the efficacy of which proceeds by rapid and unexpected changes; its action is slow, and patience is necessary. Perseverance has, in this treatment, been the secret of many cures.

Invalids should not confine themselves to a short season devoted to the treatment, says Dr. Helff; the cure lasts from six to eight weeks at most, which is but a short time for a result of any importance. Not only is it desirable to resume the course of treatment, if possible, after an interval of rest, but it is still better to continue it at the new residence. If the patient is consumptive, and takes up his winter quarters in a mild climate, an additional reason exists to strengthen the influence of the climate by that of the remedy. It is thus the most favorable chances are combined for the attainment of the final result.

The diseases in which whey would seem to be productive of most benefit, independently of all theoretical interpretation, are chronic bronchitis and incipient phthisis, obstruction of the viscera occasioned by intermittent fever, the abdominal form of hypochondriasis, hæmorrhoids, obesity, hyposthenic affections in women and children, nervous derangement kept up by debility, &c.

2. The grape-cure consists in making entire meals several times a day exclusively of grapes. These repasts, added to others, supply for the day an amount of nutriment sufficient to satisfy the best appetites. Patients begin with a pound, and progressively increase the quantity to two, three, and even six and eight, the extreme limit usually attained; few consume larger quantities.

The first portion must be taken early in the morning, not at home, but in the vineyard, when the sun has not yet absorbed the humidity on the grape, and the fruit is in all its freshness. This recommendation does not apply to consumptive patients, for whom the early morning influences are unfavorable and even dangerous. The sun must have heated the lower layers of the atmosphere, for the advantages of exercise not to be annihilated by an aggravation of the symptoms. The early repast at the vine, in the first haze of morning, when the temperature is still low, and the wind cool, is suited for such organizations or idiosyncrasies only as require motion in the free oxygenized air to urge the circulation, and rouse the system from its inertia. The first meal should be the most copious. The stomach is empty and can receive more food than in the course of the day. The other grape repasts must be regulated so that the doses of fruit may be nearly equal. The morning walk should last two hours, when a breakfast consisting of bread and water should be taken. If the weather is unfavorable for walking exercise out of doors, elegant rooms for the purpose are to be found in all such establishments, sheltered from the inclemency of the atmosphere, which is generally not to be depended on in mountainous countries. The second grape meal should precede dinner, which takes place about two o'clock; the third at four or five; and the last, a few minutes before bedtime, and almost immediately after the light repast which closes the day. This system is persevered in regularly for five or six weeks, not until the cold drives patients away from the establishments, but until the vintage has completely stripped the vine-stocks.

Some monographers carry their recommendations too far, and advise the invalids to avoid swallowing the skins and stones, because both are difficult of digestion. The treatment should not be rendered troublesome by unnecessary precautions. The grape-cure is one in which the greatest liberty should be left to the patient, not with regard to the regimen properly so termed, but to the treatment. If he can bear well the few pounds of grapes he takes in the day, he may increase the dose, or even exceed the prescribed limits. This kind of imprudence will generally present fewer inconveniences than advantages, and will give seldom rise to regret.

The whey and grape cures, particularly the latter, were well known to M. Chomel. In his 'Treatise on Dyspepsia,' this eminent physician recommends them under the denomination of extra-medical treatment,

as suited to impress the mind favorably, and subsequently to react with advantage on the system.

In M. Carrière's estimation, the predominant virtue of the grape is observable in diarrhœic discharges, even in their gravest forms. The various diseases, which derange the functions and affect the nervous system of the digestive organs, may likewise be remedied by this treatment. The grape-cure is also efficacious in abdominal and hepatic plethora and their attendant affections or complications, such as obstruction of the spleen, of the larger vessels and hæmorrhoids. It is not less beneficial in the principal varieties of discrasy, such as scrofula, tuberculosis, and pulmonary phthisis, gout, and cutaneous affections. Finally it advantageously removes hyposthenia and its concomitant symptoms, whether proceeding from a peculiar condition of the constitution or from causes of a different order.

On the Injurious Effects of Mercury in the Treatment of Disease. By Dr. HABERSHON, F.R.C.P., Senior Assistant Physician to Guy's Hospital. Post 8vo, London, Churchill, 1860, pp. 86.

The views which are advocated in this brief treatise are by no means new, and they are not advanced as new. They are, however, not so well known as they ought to be, and therefore Dr. Habershon does good and seasonable service to therapeutical science by coming forward as their advocate.

After some remarks upon the general effects and the modus operandi of mercury, Dr. Habershon proceeds to the consideration of the special instances in which this mineral is injurious, enforcing his remarks by several well-told cases from the clinical records of Guy's Hospital. These special instances are:

"1. In strumous diseases of the brain, lungs, abdomen, skin, bones, &c.

"2. In degenerative changes of advanced life, as atheromatous deposit in the vessels leading to apoplexy, ramollissement of the brain, &c., in fatty degenerations of the heart, aneurism.

"3. In fevers and exanthems, as scarlet fever, typhus, measles, smallpox.

"4. In conditions consequent on exhaustion, whether from overfatigue, preternatural drain, mental anxiety, insufficient food, loss of blood.

"5. In passive congestions of the lungs, uterus, &c., in states of weakness and loss of power.

"6. In cancerous diseases.

"7. In degeneration of the kidneys.

"8. In diseases of the mucous membranes it is of very questionable utility, as bronchitis, enteritis, cæcal disease, dysentery, &c.

"9. In diseases called inflammatory, as of the membranes and substance of the brain, of the lungs and pleura, of the pericardium and peritoneum, in croup, &c., whilst in some cases the products of disease become absorbed and health restored, in very many instances the malnutrition consequent on the mercury leads to increased effusion.

"10. In rheumatism and its complications the advantage is not equivalent to the injurious effect."

Many of these cases are of especial interest, as furnishing additional trustworthy evidence that severe disease, in which full confidence is ordinarily reposed in the action of mercury, will recover more speedily under the use of more simple agents. Thus, for example, it is well shown by cases, that acute diseases of serous membranes, and of such structures as the brain, lungs, &c., do not *require* for their alleviation the free use of this mineral.

Dr. Habershon, however, is not opposed to the proper use of mercury; and among the conditions in which mercuralization is *advantageous*, he enumerates the following:

"1. In retained excretions, as from the bowels, liver, &c., it is often of great value.

"2. As a speedy and efficient purgative.

"3. As an excitant to the excretory organs in some forms of dropsy, of embarrassed heart, of bronchitis, &c.

"4. In small or occasional doses where its more free or continued use would be detrimental, in some of the classes to which we referred to its administration as being injurious.

"5. In syphilitic diseases.

"6. In some forms of gastrodynia and irritability of stomach the symptoms are alleviated by it.

"7. In Asiatic cholera, although most severe cases have recovered after its administration, it is of doubtful efficacy.

"8. Its local application in some cutaneous diseases and chronic ulceration is certainly salutary."

Much more might have been said upon such a text, but enough is said to make the work before us a valuable and seasonable addition to our therapeutical riches.

On Opium as a Remedy in Poisoning by Datura. By (1) Dr. THOMAS ANDERSON, Assistant Surgeon, Bengal Army; and (2) Dr. T. L. MADDIN. ((1) 'Edin. Med. Journal,' June, 1860; (2) 'Nashville Med. Record and Southern Medical and Surgical Journal,' Dec. 1859.)

1. Dr. Anderson, who was the first to point out the mutual antagonism existing between the actions of belladonna and opium, maintains in this paper that all narcotic poisons with distinctly opposite actions, and destroying life by their effects on the nervous system, will, when present in the body together, counteract each other, until eliminated from the body by the excretions. For example, the distinct coma-producing narcotics, such as opium, will, in all cases, be counteracted by the poisonous solanaceæ—belladonna, hyoscyamus, datura, perhaps tobacco. He hints, also, that strychnia and conium may be mutually antidotal.

In the present paper the case related is one which seems to show that opium will counteract the poisonous effects of datura. Dr. Anderson writes as follows:

"The 43d Bengal Native Infantry, of which I was then the medical officer, while on its passage from the Punjab to Calcutta by boats, on the River Ganges, halted for four or five days at Futteyghur, in the beginning of December, 1855. The sepoys were of course allowed to go on shore, and many of them visited the large bazaar in the native city of Furrackabad, two or three miles from Futteyghur, the British cantonment. Two days after our arrival, one of the sepoys, a man well known to me, was found by his comrades lying by the roadside, near Furrackabad, in a state of high delirium, and was brought to the hospital boat. On inquiry, I learned that he had been seen partaking freely of sweetmeats (the Hindoo eats them by pounds weight at a time) in the Furrackabad bazaar, some hours before he was found; and the men at once ascribed his condition to poison administered in the sweetmeats. The many varieties of native sweetmeats poisoned with datura and bhang, one of the preparations of Indian hemp, are well known in all large Indian towns, and are used to cause death or stupefaction, so complete, as to allow of robbery or violence being committed; and a sepoy, when in undress, usually displays valuable ornaments, sufficient to tempt a thief or thug. Even without this knowledge, the symptoms were so marked, that I had no difficulty in forming my opinion of the cause of the patient's condition. I saw him immediately after he was brought to hospital, and found him in the following state:—He was reclining on his back in bed, in a wakeful muttering delirium, unbroken by an interval of even transitory consciousness. His face was much flushed; the eyes were reddened and wandering, and the pupils were brilliant, widely dilated, and quite insensible to light. The pulse was much accelerated and small. He continually twitched his extremities, but especially his hands, and every now and then pinched and tugged at the bedding. Though utterly unconscious to real external objects, the brain was evidently active, with continual visions before the eyes, as his mutterings and frequent clutchings referred to imaginary objects. He was not in the least degree violent, and required no restraint, but merely an attendant to keep him covered during his restless tossings about.

"He swallowed any liquid put into his mouth, but exactly as patients in delirium tremens do, in one convulsive mouthful.

"In an hour after his arrival at the hospital, I began the administration of opiates, and prescribed one grain of the muriate of morphia in solution, to be given every hour, beginning the first dose at 2 p m. I watched the effect most closely, taking the state of the pupil as my principal guide.

"Eight doses were given before I could observe any result. After the eighth dose, about 11 p.m., I noticed that his attention could be fixed for a moment, and that the muttering could be arrested by loudly talking to and shaking him; that the hands were less tremulous.

"Still, no impression had been made on the widely dilated pupils, and he was evidently as wakeful as ever. I therefore, before retiring for the night, directed the continuance of the morphia until the morning, with orders to discontinue it so soon as sleep threatened to

come on. I did not see him again until six in the morning, when I found all his delirium gone, the tremulousness much relieved, the pupils almost reduced to their natural state, and the patient surrounded by his delighted comrades, who were listening with wonder to the native doctor relating to them how 'dhutona' poisoning had been cured by 'apheem' (opium).

"Though he was able to talk, and was nearly well, I considered it advisable to persevere with the treatment until sleep had been obtained. This did not supervene until three doses more had been given.

"After several hours' sleep, he awoke perfectly well; and after two days more detention in hospital, he was dismissed 'fit for duty;' and while I remained with the regiment, was never again in hospital. In all, fifteen grains of the muriate of morphia had been administered in eighteen hours; and with reference to the largeness of the amount, I took care to inquire concerning the habits of this sepoy, and found that he used opium in no form whatever.

"In this case, as well as in the experiments published in my former paper on this subject, the amount of the narcotic used as the antidote, whether belladonna or opium, to restore the normal condition of the brain, would, by itself, have been a poisonous dose. This tolerance of the one poison, produced by the presence of the other poison in the system, seems to me to be a strong additional argument in favour of my theory."

2. Dr. Maddin's case is as follows:

Case.—A little girl, at the Orphan Asylum, four years of age, had eaten her dinner as usual, in apparent good health; in an hour afterwards was found in the yard, not able to stand, staggering, falling, and striking about at random, talking incoherently, a vacant bewildered expression, with the pupils dilated to the full extent of the coloured portion of the eye, and totally blind. I saw the child in about half an hour afterwards, and found her with all of the above symptoms in their extremest degree. The face was of a scarlet hue, the conjunctiva of both eyes engorged with blood; the iris could not be seen, so great was its dilatation; the retina entirely insensible to light. An incoherent delirium, imagining herself surrounded by objects that had no existence; her vagaries were of a pleasant character, and created great merriment with the other children present. Subsultus tendinum, picking about the bed-clothes, and grasping at random around her; the pulse imperceptible, and the extremities cold.

The matron of the establishment supposed the child had become deranged. As soon as I examined it, I told her it was poisoned with stramonium. She stated there had never been any of it about the house. Upon inquiry if there was any Jamestown weeds about the lot, she stated not one, for she had some days previously had every one pulled up and thrown from the yard, fearing the children might get them, having known of children poisoned with them. I remarked that, whatever may have been her precaution, the child had been eating the stramonium seed.

The first feature of the treatment consisted in the use of emetics, but by no process could I induce vomiting, so insensible had the stomach become. At first the child would swallow any quantity of fluid, no matter how nauseating, warm or cold, all indifferently, but without the slightest perceptible effect, the train of symptoms remaining the same. The jaws, after a time, became

so rigid, that it was impossible to give anything, the symptoms all the while assuming a graver character. The therapeutic import of stramonium and belladonna being the same, and as I have by repeated trials convinced myself of the certain virtue of belladonna as the antidote for opium, *vice versâ*, opium should be the antidote of belladonna, and all therapeutic agents that act on the same principle with it. This is true only with that class of antidotes which act upon a therapeutic principle, and not those which act chemically or mechanically. I ordered an enema of half a drachm of laudanum in a tablespoonful of water, having previously ordered a large stimulating enema, which passed off without any fecal evacuation. The laudanum enema was retained. In about half an hour a narrow portion of the iris could be discovered. This injection was repeated five times, and each time with good effect, with more contraction of the iris, and returning consciousness, the child becoming more composed, the delirium yielding, the expression more natural, the sight returning, the scarlet flush gradually vanishing, the circulation better, the extremities warmer, and recognising and answering questions correctly. She continued dozing pleasantly for the next thirty-six hours. The pupil remained dilated during this time about two thirds the size of the coloured portion of the eye. I should mention that after the second laudanum injection had been administered long enough to have effect, and with the first symptoms of returning consciousness, the emetics which had been taken six hours previously produced considerable nausea with some vomiting, but nothing more than a small quantity of water was thrown up. A large dose of castor oil was administered, with specific directions to examine carefully each evacuation for the stramonium seed. In the meantime, the matron informed me that she had found quite a patch of Jamestown weeds, which by oversight had been left in a portion of the yard. Seed-pods, broken open, were discovered, and the bushes seemed to be freshly broken. This was a partial endorsement of my diagnosis, which was fully demonstrated by finding a very large quantity of the seed in the fourth evacuation. All unpleasant symptoms gradually disappeared, and in forty-eight hours from the time the seed were eaten the little girl was able to be up and about the room.

I have deemed it advisable to report the above case, as a further proof of the valuable fact, which I have on previous occasions endeavoured to impress upon the profession through the pages of the 'Record,' that opium occupies to belladonna and its kindred drugs the relation of a therapeutic antithesis, and that they furnish to each other, in any quantities, safe and reliable antidotes, the pupil in all cases being a reliable index as to how far we may with safety proceed in their use.

On the Antagonistic Action of Opium and Belladonna. By MM. Cazin, Perroud, and Comégys. ('Journ. of Pract. Med. and Surgery,' Oct. 1860.)

1. M. Cazin relates a case in the *Art Medical*, in which a liniment containing one and a half drachm of laudanum and half a drachm of tincture of belladonna, in ten drachms of sweet oil, was swallowed by mistake, and gave rise to no alarming symptoms. He also prescribed with benefit extract of opium and cold affusions, for a young lady who accidentally swallowed a cup of infusion of belladonna in lieu of the same quantity of infusion of orange-leaves, and who presented symptoms analogous to those of delirium tremens. More

recently, Mr. Béhier, in six cases of sub-cutaneous injection of sulphate of atrophia for the cure of neuralgia, in all of which signs of poisoning were observed, succeeded in checking them by the exhibition of opium and of syrup of poppy.

2. In the *Gazette Médicale de Lyon*, M. Perroud publishes a curious instance of poisoning by the application of a belladonna plaister, in which the symptoms yielded to preparations of opium.

The patient was a young laundress of very delicate skin, to whom the application to the epigastric region of a belladonna plaister, four inches by two, had been prescribed. The plaister was applied at 3 p.m., and the next morning she awoke with a sense of general discomfort, headache, giddiness, loss of appetite, nausea unattended with vomiting, characteristic dryness of the throat, &c. These symptoms increased in violence in the course of the day, and in the evening, after 7 o'clock p.m., frequent syncope occurred, followed by delirium, refrigeration of the extremities, &c. The condition of the patient was such as to occasion much anxiety, and the following medication was instituted:

"The plaister was removed: an enema with fifteen drops of laud. liq. Syd. was prescribed, which was almost entirely retained; and also a four-ounce mixture containing two grains of extract of opium, to be taken in tablespoonfuls every five minutes.

"When the patient had taken four doses, she recognised the persons about her, and the delusions began to yield. The mixture was continued, but the doses were now given every half-hour only. On the following morning, the patient was in a perfectly satisfactory state, and despite the rather large quantity of opium taken, no signs whatever of narcotism was observable, an unanswerable proof of the antagonism of the two medicines."

3. The converse of the above case will be found in the *Cincinnati Lancet*. It is by Dr. George Comégys, Professor of the Medical College of Ohio. This gentleman states that with an enema containing half an ounce of tincture of belladonna he succeeded in restoring a man whose life had been greatly imperilled by the ingestion of two ounces of laudanum.

On the Physiological and Therapeutical Properties of Peroxide of Hydrogen. By Dr. B. W. Richardson. (Proc. of the Med. Soc. of London: 'Lancet,' 20th October, 1860.)

Peroxide of hydrogen was discovered in 1818, by Thénard, who gave it the name of deutoxide of hydrogen, and described it most minutely in his 'Traité de Chimie.' Little if any addition has been made to Thénard's description by Pelouze, Mitscherlich, Vogel, Berzelius, and other chemists who had also investigated the subject; and, as chloroform formerly was, it seems to have been regarded as a chemical curiosity. Of late, the speculations of Schönbein on ozone have caused the peroxide of hydrogen to be discussed more than formerly, but without any idea of applying the substance to practical purposes, until the present line of inquiry was entered on.

Physical and chemical properties.—The solution of peroxide of hydrogen in water is colourless; but it evolves an odour resembling that of a weak solution of chlorine, and becoming more obvious when a little is placed in the hand. It has, even when very dilute, a caustic taste. In the concentrated form, it whitens the mucous membrane, and imparts a tingling sensation. At its highest concentration, it has a specific gravity of 1·452, and does not freeze at 30°. Peroxide of hydrogen mixes with water in all proportions, and may be kept in solution at all ordinary temperatures. Light has, as far as is known, no influence on it; but heat evolves the oxygen. When it is briskly boiled, the oxygen does not go off until the boiling point is reached; then the oxygen goes off with effervescence, continuing to do so even after the water has again become cold, until it is all disengaged. The peroxide of hydrogen is decomposed by the voltaic current. The effects of bringing the peroxide of hydrogen into contact with inorganic bodies are various; some, as arsenic (arsenious acid) and sulphurous acid are oxidized, forming arsenic and sulphuric acid; others, as carbonic acid, oxide of manganese, silver, mercury, and charcoal, set the oxygen free. The oxides of gold, silver, mercury, and platinum, expel the oxygen with violence, and also lose a portion of their own oxygen. Some metals, as iron and antimony, exert no action in their simple state. Among animal materials, defibrinized blood absorbs the oxygen with heat; washed fibrine, and cellular tissue, evolve the oxygen pure; albumen, urea, gelatine, fibrous membrane, and skin, produce no change. When the peroxide is brought into contact with grape-sugar, carbonic acid is evolved, and the sugar is resolved into secondary compounds. The effect on putrid materials requires further investigation; but, although fresh fibrine evolves oxygen without undergoing change, the decomposition of putrefying fibrine is hastened; the same is the fact with regard to albumen. In all cases where oxygen is liberated, heat is evolved. When one of Moffat's ozone papers, consisting of paper saturated with iodide of potassium and starch, is dipped in the peroxide of hydrogen, the blue iodide of starch is formed; this, however, is prevented by ammonia, by tobacco-smoke, by hydrocyanic acid, by aqueous solutions of aconite or of opium—in fact, by the whole series of narcotics. The permanency of the neutralisation depends on the physical character of the neutralising agent; if it be volatile, as ammonia, the effect is transient. These facts, Dr. Richardson observes, show that narcotics act, not by producing any active change, but by arresting the oxidation of the tissues.

Physiological properties.—When peroxide of hydrogen is added to venous blood, this at once assumes the light arterial hue. In consequence of the presence of fibrine, the gas soon begins to be evolved; but the evolution is not perfect under a temperature below 100° Fahr. At the ordinary temperature, the oxygen is not entirely liberated until carbonic acid or oxide of manganese is added, when the blood again becomes venous. When ammonia is mixed with venous blood, the peroxide of hydrogen produces no change until the alkali is displaced. Dr. Richardson had made some experiments to ascertain whether the peroxide of hydrogen would support life. Having boiled

some distilled water for three hours, and cooled it to the ordinary temperature, he placed some in a tube, and introduced a fish, closing the free end of the tube. The animal died in fifty-five minutes. Another portion of water, treated in the same way, was charged with half its volume of peroxide. A fish was immersed; the water immediately began to give off bubbles of oxygen gas. The animal died in an hour and fifteen minutes; its body was almost entirely whitened. Another fish, placed in a tube containing common water, was unaffected at the end of two hours. In another experiment, Dr. Richardson asphyxiated a rabbit with carbonic acid, and injected slowly, through an opening in the windpipe, some water containing three times its volume of peroxide of hydrogen. In ten minutes, on opening the chest, the right side of the heart was found to be distended with dark blood; the left auricle and ventricle were charged with red blood, and were contracting vigorously. The lungs were white, and fluid charged with bubbles of oxygen exuded from them. On pouring some of the solution over the right auricle, the blood became red, but the action of the auricle was suspended. No effect was produced by pouring some over the intestines. When some of the solution was injected through the aorta, a bright-red current was returned by the vena cava, and the muscles of the neck and thorax, and the diaphragm regained their irritability, which had been apparently lost. It died away as the fluid returning by the cava became thin and discoloured. Dr. Richardson injected some peroxide of hydrogen into the lungs of another rabbit killed by carbonic acid, artificial respiration by means of bellows being set up at the same time. As soon as the fluid entered the respiratory tract, the lungs could not be inflated by the bellows. On opening the chest, it was found that the fluid had partly exuded into the lung-tissue. An additional quantity being now injected, some found its way into the left auricle, whereon the left auricle and ventricle commenced to contract. The right auricle was loaded with dark blood, and was contracting; on pouring some of the solution on it, the blood in it became of a brilliant red colour, but the contractile action ceased. The lungs were entirely blanched. In another experiment, Dr. Richardson killed a young cat with chloroform, and injected the lower extremities, through the aorta, with peroxide of hydrogen. Cadaveric rigidity was not manifested in them, while it was complete in the upper limbs within six hours. The rigidity was not removed by injection of the peroxide. The peroxide of hydrogen has also the property of preventing the tetanic rigidity producible by ammonia. The peroxide of hydrogen, diluted with not above five volumes of water, may be taken by the mouth with safety up to at least six drachms. In a full dose, it produces an exhilarating effect and general warmth of the body; there is no pain, nor distension. When the solution of peroxide of hydrogen is added to decomposing organic substances, it produces rapid destruction by combining with the oxidizible matters. This process is prevented materially by ammonia.

Therapeutic properties.—Peroxide of hydrogen, as has been already seen, quickens oxidation and arterializes blood; it hastens the decomposition of decomposing animal tissues; when combined with blood,

it restores the power of muscles to contract, but at the same time calms over-excitability. It is then rational to try its effects freely in a large number of diseases. In extreme cases of poisoning, by the alkaloids, the solution might be introduced into the blood by transfusion. In tetanus, the peroxide affords a reasonable chance; for muscular rigidity is impossible in the presence of free oxygen in the muscle. In typhus, also, in which death occurs in consequence of the air in the pulmonic tract not taking up oxygen, it may be expected to be of service; and it may be tried with great promise, both internally and externally, in cancer. Most relief is promised, however, in diabetes; for all evidence points to the fact that this disease depends on a deficient oxidation of organic material. Dr. Richardson had under his care a woman, aged forty-two, who had been suffering from diabetes for two years and a half. When he saw her, she ordinarily passed sixteen pints of strongly saccharine urine in the twenty-four hours. She was treated for three weeks with tincture of sesquichloride of iron, and opiates at night, but without effect. A solution charged with three volumes of oxygen was then given in doses of two drachms, soon increased to half an ounce. In four days the urine was reduced to eight pints; and on the eighth day she reported that she had passed a whole night in sleep. The specific gravity of the urine had fallen to 1020. The medicine being omitted for a day, the symptoms began to recur. After she had again taken it for fourteen days, the urine became decreased to three pints; and the patient, considering herself well, ceased to attend. A few days ago, she suddenly died of hemiplegia, to partial and transient attacks of which she had been subject for some years. The day before her death, she had passed three pints of urine. In the administration of peroxide of hydrogen, the volume of oxygen contained should be noted. As a medicine, it is tasteless; it should always be given in distilled water, and may be diluted to any extent. It may be combined with the mineral acids, and with sesquichloride of iron; it is incompatible with the alkalies, and with all carbonates. Dr. Richardson concludes by disclaiming all exaggerated suggestion as to the value of this new medicinal agent, and observed that he did not bind himself inviolably to any opinions which he had uttered, as they might require correction by new observations. He believes, however, that the peroxide of hydrogen is a powerful medicine, the full value of which may require years for its development, and the useful application of which may be developed even in different directions from those suggested.

On Iodism. By M. Rilliet.

(Gazette Méd. de Paris, Nov. 17 and 18, 1860.)

In this paper M. Rilliet, of Geneva, takes a review of the recent discussion upon this subject, which has taken place in the French Academy. This originated in a paper by M. Boinet, in which he maintained the power of iodized alimentation to effect all the good derivable from iodine administered medicinally, as also its absolute innocuousness. This produced a note from M. Rilliet, in which he stated that the absorption of small doses of iodine during a long period of

time sometimes gives rise to a cachectic condition which he terms "iodism," and he related three cases in which this state had been brought on by the consumption of iodized salt during several weeks. M. Boinet having flatly denied the accuracy of the statement, M. Rilliet set himself to work, with the aid of other Swiss practitioners, to produce a full memoir upon the subject, containing accounts of sixteen cases, thirteen of them occurring in persons the subjects of goitre, and three in those who were not goitrous. This memoir was made the subject of an able but adverse report by Professor Trousseau, and thereupon a lively discussion ensued.

M. Rilliet did not confine himself to his own personal experience; but found that this was corroborated by the testimony of various authors who had written on iodine, from Coindet downwards. However, his facts were disputed by M. Piorry, and his explanation of them by M. Trousseau. With regard to the facts, he is contented to leave them undefended, observed as they were with care, consciousness, and professional publicity. M. Trousseau well knew the amount of reliance to be placed upon the powers of observation of the celebrated author of the *Traité des Maladies des Enfants;* and, therefore, while admitting in the cases observed the emaciation, bulimia, palpitations, enervation, and agitation described, denies that iodine has been the cause of such persistent, and sometimes such grave, functional disturbances. He is disposed to attribute these symptoms to the so-called exophthalmic cachexia. He said he had met with cases of anæmic exophthalmia, which presented every analogy with the cases described by M. Rilliet. But the latter declares that in none of his cases was this condition of the eye present. The patients before taking the iodine exhibited no signs of any cachectic condition, the cachexia appearing in different degrees only after taking it for a more or less long period, and not recurring unless the drug was again administered. While, too, many instances of iodism were observed at Geneva in 1820, six months after Coindet's discovery, and have been seen frequently since, none of the practitioners of the town have met with an instance of cachectic exophthalmia. On the other hand, it is very possible that some of the reported cases of exophthalmic cachexia observed elsewhere were in fact examples of iodism. In fact, this so-called cachexia does not always seem to have exhibited well-defined characters. As has been well observed by Stokes, the exophthalmia and the thyroid enlargement are both epiphenomena, resulting from active or passive sanguineous congestion. There are also notable differences between the two cachexiæ. In the exophthalmic cachexia the derangement of the health usually precedes the appearance of the exophthalmia and the goitre, the cachectic symptoms attain their maximum at the period of the greatest development of the protrusion of the eyes, and of the enlargement of the thyroid, and it is a disease of continuous progress, accompanied by frequent exacerbations, during which every symptom becomes aggravated. In the iodic cachexia, although the patients may have their thyroid glands enlarged, the general health has been good, it is just at the period when the goitre diminishes that the iodism manifests itself, and once cured, it does not recur unless iodine is again administered. The one

is a disease of years, the other, at most, of a few months; the gravity of the two affections being also markedly different. Even the individual symptoms are not alike in the two cases; for not only is the exophthalmia wanting in the iodism, but there is not in it the same vascular development in the thyroid. On the other hand, emaciation and bulimia are not always observed in the exophthalmic cachexia, and the nervous symptoms are not alike in the two affections. As, however, persons of a nervo-sanguineous temperament are especially those who are liable to iodism, it is nowise surprising that a morbid condition like exophthalmic cachexia, which is only an exaggeration of such temperament, should sometimes act as a predisponent to it; and, in fact, iodine has several times acted with disastrous effect in exophthalmic cachexia.

In answer to M. Trousseau's objection, the cases of iodism are of rare occurrence, M. Rilliet admits the fact, though not to the extent stated by the reporter. Slight cases exhibiting iodic susceptibility are of constant occurrence at Geneva, and many of these would proceed to confirmed iodism if the use of iodine were persisted in. Even with this limitation, the author has been enabled to collect in two months in Geneva, a town of 30,000 inhabitants, accounts of sixteen well marked cases, being a very small portion of those observed since the time of Coindet; while M. Charcot, who has collected all the observations on exophthalmic cachexia contained in medical literature, has not been enabled to get together more than forty cases. Again, when it is objected that the small doses of iodine exhibited at Geneva are not competent to produce this slowly poisonous effect, it is replied that if doses of the iodide of potassium varying from 1-18th to 1-36th of a grain are competent—of which there can be doubt—to cure goitre at Geneva, why should they not, in certain predisposed subjects, induce this cachectic condition termed by M. Rilliet "chronic iodism."

On the Manna of the Hebrews. By M. O'Rorke. ('Journ. de Pharm. et de Chimie,' and 'Pharm. Journal,' Aug., 1860.)

All commentators upon the Scriptures have, until now, regarded the substance upon which the Israelites were nourished in the wilderness for forty years as a true manna. From the recent investigations of Dr. O'Rorke it becomes evident that this manna was a kind of lichen, and very probably analogous to a species which he has shown in Paris, which was derived from Algeria.

The following is an abstract of Dr. O'Rorke's communication:—We read in the sixteenth chapter of the Book of Exodus, that "The Israelites took their journey from Elim, and came into the wilderness of Sin. God came to the succour of his people. At even, the quails came up and covered the camp; and in the morning a thick dew lay round about. It was a kind of white grain suitable for making bread. It had the taste of the purest flour mixed with milk. When the children of Israel saw it, they said one to another *Manhu!* What is this?" From this exclamation arose the word manna. "It covered the camp at the dawn of day, and melted at the first rays of the sun.

This manna, when pounded, could be formed into a paste, and baked as bread, or made up in several ways in pastry."

The Israelites speedily took a dislike to this food, for a little further on (Numbers, chap. xi, 6—8) we read again:—"But now our soul is dried away; there is nothing at all besides this manna before cur eyes, and the manna was as coriander seed, and the colour thereof as the colour of bdellium." The people went about in quest of it, and having gathered it they ground it in mills, or beat it in a mortar, and baked it in pans, and made cakes of it, which had the taste of unleavened bread kneaded with oil. Dr. O'Rorke has remarked that the various translators of the Hebrew text differ amongst themselves as to the taste of the manna. One version of the thirty-first verse of the sixteenth chapter of Exodus is thus rendered:—This manna was like coriander seed, it was white, and it had a taste resembling the purest flour mixed with honey. The translators have evidently confounded the expression sweet, little sapid, insipid, and sugary, since they refer the flavour of manna to that of milk, of honey, and even of oil. Now, in all the European languages the word manna is employed to designate a kind of sugary gum, —a concrete sap, which exudes from certain trees in Sicily, Calabria, and Spain, either spontaneously, or by the puncture of insects, or by artificial incisions. The officinal manna is obtained from a species of ash (*Fraxinus Ornus* and *rotundifolia*), and is collected in June and July. The Sicilian manna is purgative, and it is clear that this manna is not that of the Hebrews. But there are many other kinds of manna known; it is certain even, that this name has been extended to some sugary or resinous substances, and to true honeys. In Europe the larch (*Larix Europœa*) yields a concrete juice called manna of Briançon or manna of the larch. The juniper also, and in Sweden the *Pinus picea*, yield some at the extremities of their highest branches. The East also furnishes several kinds of manna, derived from different plants, in Syria, Persia, and Arabia. These are obtained from the cedar, from a leguminous plant (*Hedysarum Alhagi*), from the oriental oak, (?) from the tamarisk, and from several other undetermined species of plants. All these mannas are collected upon the branches and the leaves of the trees which produce them, or upon the ground beneath the same trees. They assume the form of little seeds like to coriander, sometimes as white as snow, which the inhabitants collect in June and August before the sun rises; for when the sun has risen, these little masses melt, and form a honey-coloured coating which does not separate spontaneously from the branches. Rauwolf, Gmelin, Niebuhr, and especially Burckardt, have given very correct descriptions of these mannas, and of the plants which produce them.

Buckardt, in the account of his travels in the deserts of Sinai, which were traversed by the Israelites, mentions the tarfa or tamarisk as being the plant which furnishes the manna of the Hebrews. It is really strange, says he, that this should have remained unknown in Europe until it was indicated by M. Seetzen. This substance is called mann by the Arabs, and resembles, up to a certain point, the description of manna given in the Scriptures. It may be remarked

further, that this manna is only found in very wet seasons; sometimes it is altogether wanting. In the season during which the Arabs collect it, it never acquires that degree of firmness which will allow of its pulverization. The amount of tamarisk manna really collected, even in the most favorable seasons, is insignificant, and does not exceed five hundred livres for the whole of the country. It is entirely consumed by the Bedouins, who regard it as the most delicate dainty which the country furnishes. The cedars of Lebanon also yield a manna which resembles that of the larch, called cedrine, mastichina; in Egypt, the *Asclepias procera* also produces a farinaceous manna, and in Syria the *Apocynum Syriacum* is in the same estimation. But all these mannas, and especially that of the tamarisk, differ very much from the manna of the Israelites. The manna of the Hebrews fell from heaven, and covered the camp on the ground; whilst the real Oriental mannas are obtained from the stems, branches, or leaves of the trees from which they exude, and cannot be dispersed into the atmosphere and then fall in the form of dew. It is true that, anciently all the mannas were designated by the expressions of dew of heaven, honey of the air, heavenly honey, because the ancients imagined that the sugary drops suspended from the trees were produced by the dew which hardened upon those plants. Such was the opinion of Aristotle, Pliny, and Avicenna. Matthiolus regarded it as a sort of saliva or excrement from certain stars; and it was not till 1543 that all these absurd beliefs were shown to be wrong by Angus Palea, who demonstrated that Sicilian manna did not fall from heaven in the form of dew; he proved that it was produced directly from the proper juice of the ash, by simply covering such trees with a white cloth, and thus isolating them from external influences. Moreover, the supply of Eastern manna often fails for one or more years in succession; it is always anything but abundant, the trees only producing it for two or three months in the year. The manna of the Bible, on the contrary, fell all the year, and continued to do so for the long period of forty years without intermission. The real manna is only employed as a condiment or dainty; that of the Hebrews served for their daily bread. Moreover, until now, no travellers have related that the Arabs really use manna to replace their bread during meals.

The manna of the Hebrews was not, then, a true manna, and Dr. O'Rorke believes that he can demonstrate evidently that this manna was a *lichen*. The lichens are cryptogamous, and there are a great many species. They are the first plants which make their appearance upon naked bodies, such as stones, rocks, and the ground. These plants have no true roots, and are not parasitic, except in appearance, for they do not live at the expense of the body upon which they are applied, and to which they adhere. Heat dries them up, but moisture destroys them to life. No lichen is deleterious, and all contain a nitrogenous matter, and in abundance a kind of starch; they are employed, therefore, in several parts of the globe as food for man and other animals. We could even employ them everywhere for such a purpose, did we not possess more nourishing matters, and of more agreeable flavour. In Lapland the reindeer eat them; in Norway, those of the inhabitants which are nourished by them are said to be

less frequently affected by leprosy than those of whom fish constitutes the principal food. The alimentary value of certain lichens would be even superior, according to some authors, to that of wheat, since a bushel of powdered lichen is equivalent to two bushels of wheat-flour. A great many lichens contain enormous quantities of oxalate of lime. Some contain a bitter principle (*cetrarine*, &c.), which renders them febrifugal; others a rich colouring principle (*orcine*); and all contain a fecula analogous to inuline, which is not coloured blue by iodine.

Amongst the lichens, there is one which is called by Pallas lichen esculentus, and which, according to Acharius, belongs to the genera lecanora and (?) parmelia. This lichen is found in Persia, in the deserts of Tartary, in the Crimea, in Asia Minor, &c., always on the ground, where it is carried either by the winds or by its falling from the neighbouring mountains. It there sometimes forms beds several inches in thickness. The sheep are nourished by it, and men make of it a kind of bread, which the poor consume and regard as true manna sent to them by Providence. Already, on the 3d of August, 1828, Thénard had presented to the Academy of Sciences a lichen of a fawn colour, granulated, composed of broken crusts, which had fallen in the neighbourhood of Mount Ararat, in Armenia, and which a Russian general of the Persian army had sent to him.

It appears that this lichen dries up during the summer upon the mountains, and is transported by the winds to a great distance, which has caused the inhabitants to say that this grain fell from heaven. This shower was not rare, and under certain circumstances covered the ground to a depth of five or six inches in several places. The sheep were very fond of it, and men were habitually nourished by it. A shower of this kind was noticed in 1845 in the Crimea, at Jenis-Bechir. It covered the ground to a depth of three or four inches, and the inhabitants, following the example of Dr. Leveillé, nourished themselves with it for several days. This lichen is even more common in the Algerian Sahara and in Arabia. Everywhere they employ it for the nourishment of men and horses. The specimen lately shown in Paris by Dr. O'Rorke was collected by M. Bellesterot et Boghar in Algeria, and M. Hardy, director of the Botanic Gardens of Algiers, in 1849, had sent a specimen of it to the Exposition, which was altogether unnoticed. This lichen called *takaout* in Arabia, and *ousseh elard* (excrement of the earth) in Algeria, is found in the form of little twisted, rounded grains, the largest of the size of a pea, and of a yellowish-gray earthy colour. Its fractured surface is white and farinaceous, and contains some particles of sand which crack under the teeth. In flavour it is insipid, amylaceous, and with a feeble aroma of the champignon. When boiled in water this lichen slightly swells, becomes more tender, and can be mixed with milk, butter, and salt, and form a food which has no bad quality, or disagreeable appearance.

In the Algerian Sahara, as well as in Arabia, this lichen does not adhere to any foreign body; it appears to spring spontaneously from the ground after rain; the wind collects it together in certain places in large heaps, and they say of it *acquirit vires eundo*, for in its wandering course it vegetates and increases in size. Its surface is covered

with small, very apparent fructifications, from which, at maturity, the reproductive sporidia escape, which, microscopic in appearance, become dispersed over the ground, or are transported by the winds to enormous distances, in order to develop themselves, when the conditions of soil and humidity are favorable to them. Such, while it remains, is of an inestimable value to the wandering and migratory tribes of the deserts, who are preserved by it from hunger in years of famine and in certain particularly critical circumstances.

Is it not evident, says Dr. O'Rorke, that this substance is the true manna of the Hebrews,—that which fed them with regularity for forty years in the wilderness? Those who desire a more complete agreement with the text of the Scriptures can yet admit this conclusion:—Moses has confounded under the name of manna two distinct substances, because they both resembled each other in apparently falling from heaven, that is—1st. An amylaceous substance which could be preserved and pulverized, suitable for making bread, might be collected at any time, increasing on the ground, like to coriander or bdellium in colour; this is the lichen described above. 2d. A sugary substance, very readily alterable, somewhat rare, and collected on certain trees or shrubs during three months of the year only, and serving as a condiment or dainty to mix with the lichen bread; that is to say, the manna of the tamarisk, of the Alhagi, and perhaps of some others. We see, then, that the real bread of the Hebrews, the manna of the wilderness, is no other than the *lichen esculentus* of Pallas, or the *lecanora esculenta* of Acharius. No commentator has hitherto alluded to this.

On Penghawar Djambi. By Dr. VINCKE. ('Med. Zeitung Russland,' 42-43, 1859; and 'Pharm. Journal,' April, 1860.)

After reporting fourteen cases in which the hæmorrhage from serious wounds or bleeding ulcers was promptly and permanently arrested by the application of penghawar, the author communicates the experiments made by himself with the view to ascertain the *modus operandi* of this remedy. The treatise contains the following information:

1. *On the phytography of penghawar* (*paleæ cibotii*).—The specimen examined by the author had been to the greater part separated from the stipes of the fern, and consists of delicate filaments, half an inch to two inches long, which are very soft, flexible, and so light that they keep themselves floating in the air for a long time. The shortest ones are thicker, dark gray, or blackish, and are present in penghawar, but in small quantity. The longer filaments are silky, shining, tortuous, very delicate, and of golden, light-brown colour. It weighs so little that six grains constitute a considerable mass—sufficient to arrest bleeding from an artery one line in diameter. It swims on water, but falls to the bottom of the vessel after about half a minute, as it absorbs water; it gives an empyreumatic odour on being heated, burns faintly on being brought into contact with the flame of a candle, and detonates under complete combustion, diffusing an odour like agaric. On microscopic examination the author found that the filaments of penghawar have nothing in common with hair. They form band-like, flat processes, with articulations;

their breadth surpasses their thickness three times and more. The joints are dark-brown, resemble those of the shave grass, but have delicate, often ramified, processes. The part between the articulations is two to four times longer than wide, either of uniform width, or in the dried state conical, smaller at one end, of yellow colour, translucent, covered with violet granules, which, together with the processes of the joints, fall off on applying a weak solution of caustic potassa, but become more distinct on being soaked in ether. The base of the filaments is either smaller, with branchy processes, or thicker, surrounded by hairs; their upper end is drawn out into a transparent, needle-shaped tubule. Each filament forms a hollow sheath, which is partitioned by transparent diaphragms at the articulations. The cavity of the filament easily fills itself with any kind of fluid; fine powders do not penetrate into uninjured joints. In a solution of sulphate of iron the filaments become blackish, nearly opaque, and very brittle; if they have been previously soaked in ether, they assume a dark-brown colour in the above solution. By iodine and dilute muriatic acid the physical properties of penghawar are not changed. A solution of caustic potassa becomes dark, the filaments themselves assume a bright-yellow colour in it, are rendered very smooth and soft, in consequence of losing their granular cover and their processes. The author does not attach much importance to the chemical reaction of penghawar, and only states that it forms not a green (v. Bemmelen) but a dark-violet, blackish precipitate with the salts of iron.

2. *Results of experiments on freshly extracted blood, and on living individuals.*—All the experiments show that the hæmostatic effect of penghawar depends upon the capillary attraction of the water, which "exceeds the force by which the water in living blood is held in combination." The coagulation of the blood (also of that which is freshly drawn) is the immediate consequence of the blood being deprived of its watery portion— a fact which is confirmed by comparative experiments with capillary glass tubes. Penghawar, however, acts with a five times greater rapidity. A circumstance which promotes the firm adhesion of the coagulum to the surface of the wound and the permanent occlusion of the orifices of the vessel, consists in the elasticity and delicacy of the filaments; on moderate pressure the latter penetrate into the finest interstices and apertures on the surface of the wound, and thus cause coagulation of the blood not only on the surface of the wound, but also in the interstices of the tissues next to it. But it is particularly by the following qualities that penghawar excels other hæmostatics:

(1) It arrests quicker than any other pharmaceutical means (agaric, sponge, bovista, &c.), parenchymatous, venous, or arterial hæmorrhage, provided the diameter of the artery does not exceed one line and a half. [The Indians stop bleeding, also, from greater arteries with penghawar.]
(2) It produces a coagulum even in cases where the blood has changed so much that it has nearly lost the property of coagulating, or where the walls of the vessels are so diseased that they are incapable of a plastic process, as, for instance, in carcinomatous and scorbutic ulcers.
(3) Penghawar does not change the vitality of the wound or ulcer, and therefore does not exert an injurious influence upon the healing process.

Penghawar acts better when crumbled than if applied entire. It is to be kept in a dry place. Five grains are sufficient to arrest con-

siderable hæmorrhage; more than one scruple was never required. It is pressed for two or three minutes directly over the bleeding surface, after which, if possible, a compressive bandage or strips of adhesive plaster are applied over it, taking care not to draw the wound too much together. If the bleeding does not proceed from the whole surface of the wound, it is not necessary to fill out the entire cavity of the wound or ulcer with penghawar. The hæmorrhage ceased more rapidly if the author pressed the penghawar (in the form of a pencil) so upon the bleeding surface that the filaments were directed perpendicularly against it. The internal administration of penghawar, as recommended by Gaupp and others, is quite useless.

Can Lightning cure Disease? By Dr. ALTHAUS. ('Med. Times and Gazette,' June 2d, 1860.)

In discussing a question to which the answers already supplied are by no means satisfactory, Dr. Althaus proceeds to say:

"Lightning may kill at a blow, or induce blindness, deafness, and other diseases of a paralytic as well as a spasmodic character, which, however alarming they may appear at first, generally subside in a few days, and scarcely ever last longer than some months; but it undoubtedly has sometimes also the beneficial effect of an electric current of moderate intensity, and can cause the cure of rheumatic, paralytic and spasmodic conditions. No doubt most of the numerous cases described as cures by lightning are either fabulous or greatly exaggerated, but the very existence of so many reports seems to infer some small degree of truth.

"Space will not allow me to quote fully all the instances of this kind which have been recorded, and I shall therefore analyse as a good specimen of this class of cases that only of Samuel Leffers, of Carteret County, North Carolina, U.S., which is generally quoted as an instance of amaurosis or general paralysis cured by lightning, and which occurred in 1806. In the United States, where, if anywhere, the *crescit eundo* exists, which Virgil attributes to Fame, the most marvellous particulars were circulated of the case, and Professor Olmsted, who has recorded it,* states that henceforth it was generally believed, that under certain circumstances lightning would suddenly change decrepit old age into blooming youth. Thus it was related of Mr. Leffers, a very old man, who had been so much paralysed that he was no longer able to walk or even stand, and whose features were frightfully distorted, that he had through a lightning shock suddenly regained the full force of his youth and an exquisitely beautiful complexion and soft skin, and that he had retained this complete youth up to his ninetieth year. The *facts* of the case are, however, as follows:—Samuel Leffers was affected by what is now generally known as paralysis of the portio dura, and which in most cases is only a troublesome and annoying, but by no means dangerous, affection. At the time, however, when this occurred, medical diagnosis had not advanced so far as it is at present, and this affection was not distinguished from paralysis of the face due to hemiplegia, and was therefore considered as a certain sign of the immediate break up of

* 'American Journal of Arts and Sciences,' vol. iii, p. 100, 1821.

the patient's constitution. That Samuel Leffers' complaint was in fact nothing more than paralysis of certain branches of the facial nerve is evident from the description of his symptoms, which were as follows:— On awakening one morning he felt an unpleasant numbness in the left side of the face; he could not shut the left eye, and his speech was impaired. These symptoms 'caused him to believe that he had been affected by a paralytic stroke.' Some time afterwards the disease improved in the other parts of the face, and centred in the eye, which he could not shut day or night; it was consequently exposed to obnoxious influences, and the sight became much impaired; that is to say, the buccinator and other muscles recovered their tone, while the orbicularis palpebrarum still remained paralysed. He was in this state when, one day, walking in the hall of his house during a storm, he was struck by lightning. He fell down, and remained unconscious from fifteen to twenty minutes, when he recovered so far as to be able to distinguish objects around him, and to be conscious of his position. During the night he fully regained the use of his senses and limbs, and felt so well the following morning that he resolved to write an account of what had happened to him to a friend. He then supposed, that as he had not been able to see well for some time, his note must necessarily be a short one; but he was astonished to find that he could write a long letter without experiencing any inconvenience, the last remains of the paralysis of the portio dura having entirely disappeared; nor did it again return. He had thus been effectually cured from his previous complaint; but his hearing had at the same time become weak, and he always afterwards complained of a certain degree of deafness. From this description it is quite evident that the orbicularis palpebrarum muscle, which had been paralysed, was beneficially affected by the stroke; but the case was neither one of amaurosis nor one of general paralysis cured by lightning.

"From this and other cases which I could mention, it appears by no means improbable, that certain paralytic, rheumatic, and spasmodic conditions may, under certain circumstances, be cured by lightning, just as they can be cured by Faradization."

A simple Method of imparting an agreeable flavour to Cod-liver and Castor Oils. By M. JEANNEL. ('Journal of Pract. Med. and Surg.' August, 1860.)

Therapeutics are indebted to Mr. Jeannel for an improvement which will facilitate the always difficult exhibition of fish oils. Like Mr. Sauvan of Montpellier, Mr. Jeannel observed that the addition of ten grains of essential oil of bitter almonds to three and a quarter ounces of the most offensive cod-liver oil entirely dispelled its nauseous odour and fishy flavour. It was, however, not enough to disinfect the oil, it was further desirable to render it agreeable, an object which Mr. Jeannel has effected by very simple means; the cod-liver oil should be powerfully shaken in a phial with once or twice its volume of distilled cherry-laurel water, and the two fluids afterwards separated, after forty-eight hours' rest, with a funnel. The oil should be filtered if it has not spontaneously clarified. Brown, fetid oil acquires by this simple process an agreeable perfume

and a pleasant flavour of almonds, which remains on the taste during the whole time of digestion.

With regard to castor oil, three drops of essential oil of almonds communicate to three and a half ounces of oil a pleasing perfume and taste. The 'Gazette des Hôpitaux' states that for several months Dr. Rennes, of Bergerac, has been in the habit of successfully palliating the noxious flavour of fish and castor oils, by merely adding one drop of essence of bitter almonds to every six or eight drachms of oil.

On the Restoration of Persons apparently Drowned. By Dr. CHRISTIAN. ('Proceedings of the Royal Medical and Chirurgical Society,' Jan. 22d, 1861.)

Two societies, the Royal Humane Society and the National Life-boat Institution, issue instructions, which are widely circulated, as to the best mode of restoring suspended animation in persons apparently drowned. These rules differ not only in detail but in principle.

1st. As to the mode of performing artificial respiration.

2d. As to the propriety of using the warm bath.

On each of these matters the author is wishful to elicit an expression of opinion from the fellows of the society, after laying before them some considerable experience acquired during twelve years as medical officer to the Royal Humane Society in Hyde Park. The number of cases of submersion for twelve years was 443. Of these, 181 were rescued and recovered without treatment; 165 were brought to and recovered by treatment at receiving-house; and 97 were brought dead or the treatment was unsuccessful. The number of cases of submersion for the last four years was 140. Of these, 68 were rescued and recovered without treatment; 38 were brought to receiving-house and recovered; and 34 were brought dead or were not restored. 15 of these cases were treated by the Marshall Hall method, and 3 recoveries followed; the rest were treated by the rules mentioned below.

As to the mode of performing artificial respiration, the method recommended by the Life-boat Institution is what Dr. Marshall Hall called his "Ready Method," while that now used by the Royal Humane Society is the method of Dr. Silvester. On Dr. Marshall Hall bringing his method under the notice of the Royal Humane Society, the committee adopted means immediately to give it a fair trial. Copies of his instructions were sent to all their medical officers, numbering 120, and the boats of the society on the Serpentine had a platform made to each, on which to manipulate directly the body was taken from the water, and the boatmen were instructed and practised in the performance of the operations as he directs. After giving the method a full trial in about fifteen cases, the very intelligent superintendent, the boatmen, and the author became so satisfied of its inefficiency to restore animation, and of the difficulty of properly carrying out the manipulations, that he felt himself justified in representing those facts to the committee, and in adopting the plan recommended by Dr. Silvester, which he believed in every way to be superior, more manageable, less likely to injure the patient, will fill the chest with and expel air from it more fully, and will

not force the contents of the stomach upwards and in the way of respiration. The following are the directions for treating the asphyxiated at the receiving-house, Hyde-Park:

"Wipe the mouth and nostrils directly the body is taken from the water.

"Use Dr. Silvester's method; at the same time let the body be taken as quickly as possible to the receiving-house, and place it in the bath up to the neck.

"Raise the body in twenty seconds from the water, and dash cold water against the chest.

"Pass ammonia under the nose.

"Use again Dr. Silvester's method, and the inflating apparatus if it fail.

"Remove the body from the bath, and rub the surface with dry, hot towels, perseveringly continuing the other treatment."

After many experiments the author has come to the conclusion that inflation of the lungs by Dr. Silvester's method or by the society's apparatus is the first remedy, and the shock of the warm bath the second; that after eight minutes' complete submersion recovery is hopeless, and that when ten minutes elapse after being taken from the water without any effort at respiration it is equally so. On the subject of the warm bath which has excited so much discussion as a remedy, he remarked that it must be understood that it is used as an immediate and powerful excitant; and it had so frequently happened (twice while he was actually present) that a person brought in as asphyxiated, who to the bystanders was apparently quite dead, immediately on being placed in the bath gave the sob or gasp which is the precursor of respiration, that it might be boldly stated to be a most valuable adjunct to treatment, and, properly managed, in no way pernicious. He concluded by citing a letter from Sir Benjamin Brodie to the Royal Humane Society, confirming the preceding conclusions.

On the mutually Antidotal Relations of Strychnia and Woorara. By M. VELLA. ('Gaz. Méd. de Paris,' 17th September, 1860.)

In a paper read before the Parisian Academy of Sciences, 10th September 1860, Signor Vella, of Turin, gives a detailed account of certain experiments which go a long way to prove that these two drugs, strychnia and woorara, stand one to the other *almost* absolutely in the relative positions of poison and antidote. (The reserve implied by *almost* is necessary, as it will be seen that this neutralizing property possessed by the woorara can be relied on within certain limits only.) The author of the above communication informed the Academy that he was first led to administer woorara in the treatment of tetanus by the consideration of certain experiments by M. Claude Bernard, in which it was clearly established [illegible]vsiological effects of this poison on the animal economy w[illegible]lysis of the motor nerves. For several years past, the [illegible]a has been occupied in investigating the question of [illegible]nus by woorara. This special therapeutic action clin[illegible]ly denies to this agent, and

Signor Vella has of late given to his researches a somewhat different direction, and has undertaken ninety-seven fresh experiments, partly with a view to the possibility of rendering the ingestion of strychnine innocuous by the subsequent injection into the blood of solutions containing woorara, partly with a view of ascertaining in what proportions and to what extent the two drugs administered *conjointly* could be taken without the poisonous effects of *either* being manifested. In the first class of investigations, then, the animals, generally dogs, were poisoned, or at least made to swallow a dose of strychnine known to be fatal to them under ordinary circumstances, and then small quantities of woorara were from time to time thrown into the jugular vein whenever tetanic symptoms showed themselves, until the toxical effects of the first agent were exhausted, and complete recovery of the animals took place. In the second category, the two poisons were mixed in certain determined proportions, and no effect whatever was produced, and the life of the animal was unaffected. A specimen of each suffices to illustrate Signor Vella's mode of proceeding. In a first experiment, the solution of two fifths of a grain of hydrochlorate of strychnine in six drachms of distilled water was injected into the stomach of a middle-sized dog fasting, with the effect of producing at the expiration of a quarter of an hour violent tetanic convulsions. A solution of woorara was then thrown into the jugular vein; this produced a temporary cessation of the muscular spasm. When the convulsions returned, the injection was resumed and continued at intervals until a dose of three fifths of a grain of woorara, dissolved in half an ounce of water, had been taken into the circulation. The whole operation lasted three hours, and at its termination the dog was allowed to run about the laboratory, apparently quite well, and no return of the tetanic symptoms occurred subsequently. Three days were now allowed to elapse, and the same dose of strychnine was exhibited to the same animal, who was then left to his fate, and died sixteen minutes after its administration. In an experiment of the second class, into the jugular vein of a big dog is injected a mixture containing one thirty-third of a grain of strychnine, and a quarter of a grain of woorara, dissolved in fifteen minims of water, and the operation is followed by no bad result whatever; but on a subsequent injection of the same dose of strychnine, not guarded by woorara, the animal is killed in the space of ten minutes. It has been proved by Signor Piria, a chemist at Turin, that on the mixing together of these two agents no new chemical combination takes place, nor is appreciable alteration noted, the two drugs preserving their individualities indefinitely—a fact which renders their *modus operandi* in the process of mutual neutralization all the more obscure, the natural conclusion at first sight being that their harmlessness when mixed was owing to the formation of a new and insoluble salt.

On the Effects of an Elevated Temperature in the Treatment of Poisoning. By Dr. E. Brown-Séquard. ('Journal de la Physiologie,' vol. ii, 1859.)

Of late years various physiologists, especially Kunde and Valentin, have shown of how great importance it is in the case of poisoning, or

when from certain circumstances the functions of the skin have become suppressed, to maintain an elevated degree of animal heat. M. Brown-Séquard, in 1849, had published some very decisive observations upon this subject, and, as his statements did not excite the attention which he thinks they deserved, he now republishes them, preparatory to more lengthened communications on the matter.

Performing various experiments upon rabbits and guinea-pigs, he confirmed the results derived by Chossat and Prevost from those which they had performed on dogs, viz., that the simple lowering the temperature sufficiently induces death, and such diminution requires to be less considerable in proportion as it is rapidly produced.

These facts being established, it becomes very probable, if not certain, that in all cases—whether as a consequence of disease, wounds, or poisoning—when the temperature of man becomes lowered to a certain degree, there is danger to life from the sole fact of such diminution. This is the case in cholera, in sclerema, in certain paralyses, in cases in which the respiratory functions are deeply impaired, in fractures or dislocations of the spine with crushing of the medulla, in considerable hæmorrhages, and in most cases of poisoning, providing the patients continue to survive for some hours. It has long been known that the temperature diminishes after poisoning, and there is scarcely a case recorded in which the patient is not stated to have been cold; and from M. Brown-Séquard's experiments it results that all varieties of poison, however introduced, are capable of so reducing the temperature of rabbits and guinea-pigs that death will ensue provided that the animal has survived the introduction of the poisoning four or five hours. A dose of poison which is sufficient to kill when there is no obstacle placed to the diminution of the temperature, will not do so when such temperature is maintained at or about its normal condition. This has been repeatedly proved by comparative experiments. It is then by reason of the lowering the temperature that poisons given in a certain dose may kill; and in the treatment of cases of poisoning we should have regard as much to the maintenance of a normal degree of temperature as to the expulsion of the poison or combating it by antidotes. In this way it is possible the mortality from poisoning may be considerably diminished.

It is well known that it is in general sufficient to cover the cutaneous surface of an animal with one or two layers of oil or varnish, in order to induce its death; poisoned probably by toxical substances, which are in the normal state eliminated from the blood with the sweat, and which now, being unable to escape by the skin, become accumulated in the economy. M. Brown-Séquard has found that animals in this condition will survive the experiment if they are placed in a temperature above 26° or 28° C. Their animal heat then does not diminish, which it does notably when they are kept in a lower temperature. It is thus from such diminution of temperature that the death of animals is produced the surfaces of whose bodies have been covered with oil or varnish.

II.

REPORT ON PHYSIOLOGY.

A Treatise on Human Physiology, designed for the use of students and Practitioners. By JOHN C. DALTON, Jun., M.D., Professor of Physiology and Microscopic Anatomy in the College of Physicians and Surgeons, New York. Second edition, revised and corrected, with 271 illustrations. (8vo. Philadelphia, Blanchard and Lea, 1861, pp. 690.)

DR. DALTON, jun., is well known as a hard-working experimental physiologist of no ordinary ability, and the demand for a second edition within two years from the appearance of the first is no more than a proper and well-deserved recognition of the many and decided merits of the first edition as a standard text-book of physiology. In the present edition the principal additions and alterations are—

1. The introduction of an entire chapter on the special senses—a subject only incidentally touched upon in the first edition.

2. The re-arrangement of the chapter on the cranial nerves, and the introduction of the new views and facts in regard to their physiology, which have been rendered necessary by the labours of Claude Bernard and others.

3. An account of some new original experiments relating to the function of the cerebellum.

4. Certain considerations respecting the general properties of sensation and motion.

5. A chapter on imbibition and exhalation and the functions of the nervous system. Additions have also been made in various parts to the chapters on secretion and excretion, on circulation, and on the functions of the digestive apparatus.

Of the two hundred and seventy-one illustrations, only eleven have been borrowed from other writers, and twenty-two are not to be met with in the first edition.

— Of the three parts into which this work is divided, namely, on nutrition, on the nervous system, and on reproduction, the last is incomparably the best written and most satisfactory. It is, indeed, the most intelligible account with which we are acquainted of this extensive and difficult subject. The section on nutrition is also both clear and full. The section on the nervous system, on the other hand, requires considerable additions to bring it up to the level of our existing knowledge; and we hope that Dr. Dalton will soon have

an opportunity of correcting this defect by a call for another edition. The merits of the work as it stands, however, far transcend the demerits, and we have much pleasure in recommending it to the notice of our readers.

On Organic Polarity, showing a connexion to exist between Organic Forces and ordinary Polar Forces. By Mr. H. F. BAXTER. (12mo. London, Churchill, 1860, pp. 187.)

Mr. Baxter holds that the force (organic-force, cell-force, or germ-force) associated with the actions which take place in living plants and animals, viz., secretion, absorption, and nutrition, must of necessity be a *polar* force, because these actions are accompanied with the manifestation of current-force, or, in other words, because they present the marked characteristics of polarity. The idea is by no means original, but Mr. Baxter enforces it by some original experiments and arguments.

On certain of the Phenomena of Life. By Dr. B. W. RICHARDSON. ('Lancet,' Feb. 23d and March 9th, 1861.)

The phenomena of life, as manifested in the process of oxygenation, the animal calorific process, and the methods of restoring suspended animation, are the three special objects which Dr. Richardson brings under notice in the Lettsomian Lectures of the present year under this somewhat vague title. After some introductory remarks, in which the metaphysical method of studying life is severely criticised, and the physical character of the study maintained, the author proceeds to consider *the phenomena of life as manifested in the process of oxygenation.* The nature of oxygen is first described. According to Dr. Richardson, oxygen in the gaseous state—that is, as it is presented for respiration—is not to be considered as a simple body, but as composed essentially of a ponderable base diffused through an imponderable medium. Hence, when oxygen enters into combination with another body, it does so at the expense of the loss of more or less of the imponderable part. This, liberated, gives rise to the presence of heat, or heat and light, or electricity. Bodies capable of combining with oxygen are also to be looked upon, when they can take the gaseous form, as mixtures of a ponderable base, with an imponderable fluid, and in the act of combination their imponderable fluid also may be set free. When, therefore, oxygen enters into combination with another body, with evidence of heat, the heat must be said to have pre-existed, and to have been evolved, not generated; and when oxygen enters into combination, with evidence of electricity, the electricity pre-existed, and was liberated by this combination, not *made* by it.

The corollary from this argument is that gaseous oxygen may be modified in its action by a variety of causes acting by and through the medium which constitutes its imponderable part, and this is the fact the lecturer next proceeds to explain. This portion of the discourse is considered under the following heads:—1. Effects of quantity of

oxygen—*i. e.* condensation—on animal life. 2. Effects of cold and heat. 3. Effects of electricity. 4. Effects of re-inspiration. 5. The influence of agents which by their mere presence prevent the process of oxygenation. The following brief summary of these most interesting topics must suffice:—The mixture of oxygen and nitrogen which supports life longest in a confined space, at 60° Fahr., is a dilution of four parts by volume of oxygen to one of nitrogen. This mixture at the same temperature supports life longer than pure oxygen. In pure oxygen, at and below 60°, animals die—a circumstance due to the fact that in such oxygen they do not consume the gas. The lecturer proves this by showing that a secured animal placed in a chamber of oxygen, in which a previous animal had died, lived as long as the one preceding. The influence of cold on oxygen was to destroy more effectually the combining power; that it did so was proved by the fact that if two animals are placed, one in pure oxygen the other in air, and both in a temperature so low as 20°, the one in oxygen dies first. Heat, on the other hand, upholds the sustaining power of pure oxygen. Electricity driven in small sparks through oxygen sustains the power of the gas, while in large sparks it destroys the sustaining power. Re-respiration reduces the sustaining power of oxygen to a minimum, notwithstanding the removal of carbonic acid and ammonia as products of respiration. The substances which prevent oxygenation have for their great type ammonia. They include chloroform and all narcotics, volatile, fluid, or solid, as well as many other bodies which are products of the economy. This part of the lecture was illustrated by experiments, which showed that it did not matter whether the disturbing body were introduced by the medium of the oxygen or of the substance to be oxydized. Thus the diffusion of a small quantity of chloroform through a bell-jar of air was shown to prevent the combustion of a taper. In this case the catalytic agent was introduced through the air. In another experiment, a solution of iodide of potassium and starch was treated with peroxyde of hydrogen. Instantly the iodine was set free, and the blue iodide of starch formed. But another solution of iodide of potassium and starch was taken, and to it a minute portion of ammonia was added. Then the effect of the oxygen water was nil until the evaporation of the ammonia.

Passing on to the consideration of the *animal calorific process*, as it occurs in the living body, Dr. Richardson arranges his subject in four major propositions:

1. That caloric is the primary cause of motion in nature, and that it is, therefore, a cause of life in so far as motion represents life.

2. That the process of calorification in animal bodies takes place mainly in respiration.

3. That the evolution of caloric in the body, at a temperature of 96°, is brought about by the extreme distribution of the carbon, and by the dilution of the oxygen in common air.

4. That caloric is the prime cause of muscular motion, and is alone sufficient to restore the muscular irritability.

In discussing the first of these propositions, the lecturer refers to the sun and its influence on life, illustrating how life was proportional

to the heating power of the central luminary. Then he introduced the analogy as induced by the effects of artificial heat, and the production and effects of heat as exhibited in a steam-engine and a horse.

On the second topic he expended an elaborate experimental argument, all tending to prove that Black and the very early observers were right as to the main source of animal heat. This part of the lecture was illustrated by some simple but effective experiments, in which the colour of the arterial, as distinguished from the venous, blood was shown to be due to physical changes in the red corpuscles. Thus it was shown that the mere increase in the density of the blood effectually arterialized it, in so far as its colour was concerned.

The third proposition was also illustrated by experiments, and clearly set forth. According to Dr. Richardson's hypothesis, the combination of oxygen with the carbon of the blood is effected by a means similar to that which occurs in vinous fermentation—zymosis, the fibrine playing the same part as the diastase on other albuminous bodies used to excite fermentation.

In support of the last proposition the lecturer stated that by injecting simple warm water through the arterial systems of different animals he had been able to restore vigorous muscular contraction one hour and a half after death. A rabbit that had been killed with chloroform just previously was operated on as follows:—The chest was laid open, and the pericardium removed from the heart; a small opening was now made through the left ventricle, and a pipe was passed into the aorta and tied in the vessel; water, heated to 115° Fahr., was now slowly injected into the arteries, when every limb of the animal took on muscular action. This effect was kept up for some time; and when the injection was stopped, to allow the lecturer to go on with the discourse, there were still brisk muscular movements. Commenting on this experiment, Dr. Richardson said that he had extended its operation to cases where death had been caused by drowning and by carbonic acid. After both these modes of death the same contractions could be produced, but they were less active than after death by chloroform.

Reasoning on the cause of the phenomena that had been shown, the lecturer said that caloric, in his opinion, is the relaxing force in muscle, and that contraction of muscle is due to a resolution of the caloric by the action of another—an electro-nerve—force.

The effects observed, the lecturer continued, could be so materially modified by heat, that by modification of degree he could make a muscle quiver, contract alternately, convulse, or become tetanic. The force called the *vis insita* of muscle by Haller resolves itself into contraction of muscle on abstraction of caloric—an act which may thus take place without the interference of the nervous system.

In life the muscles act, however, under obedience to the will, through the agency of the nervous system. How this is brought about formed an interesting subject of discussion. On the point of nerve-force, or electro-nerve-force, Dr. Richardson advanced a view differing materially from that which is generally received. He taught that the special fc in the nervous system is not generated

specially in the ganglia or centres, but everywhere where there is nerve; that this force does not travel from the centres to the periphery, either in intermittent or continuous current, but exists, wherever there is nerve supplied by blood, in a state of equilibrium; and, lastly, that every impression made on the nervous system, and so on the brain, is not by a nerve acting as a specific conductor, but by a disturbance in the equilibrium of the nerve-fluid altogether. This nerve-force or fluid, at the instance of the will or of impressions made on it from the external world, exerts a counter-influence in the muscular fibre to that which may be called the force of the muscle itself, or the force which holds the muscle in a state of passive elongation. Under this counter-influence the diameter of the fibre is changed from the long to the transverse, so that, without losing in bulk, the muscle contracts and shortens.

After giving illustrative experiments in which the calorific and the electrical forces were made to counterbalance each other in muscle, the lecturer added, that if he could disconnect from the nervous system every portion of muscle, and leave the nervous system entire as a great skeleton, with its blood-supply still perfect, that system would exist as a motionless intelligence; while, on the other hand, if he could strip the muscular system of every portion of nerve, and leave the muscular skeleton with its attachments complete, and its circulation uninjured, that muscular skeleton would remain an unintelligent mechanism, requiring now the intelligential part of another and more perfect body to bring it into action and guide it in its course.

The remarks on *the means of restoring suspended animation* included the history of a long series of experimental researches on resuscitation, the most prolonged and varied researches perhaps in this direction that have been as yet instituted. Artificial respiration, electrization, and injection of various fluid substances into the circulation had been the means employed; but these had been varied amd applied in a manifold manner. The history of these inquiries was so arranged as to bring out all the points of failure rather than successes, real or partial. The reasons why artificial respiration fails; why emphysema of the lungs is often a result after every mode of artificial insufflation; why the paralysed heart cannot be restarted; why electricity exciting powerful contractions in voluntary muscles, so that the animal seems to relive, does not complete the process;—these and other analogous points were summed up with much precision and experimental argument. The failures related, though numerous, did not dishearten the lecturer, who asserted that all the facts leading to a definite mode of reanimation were probably in our hands, or soon would be, and that the problem is so near the solution that any day may bring it forth in all its magnificent solemnity.

The summary of the means to restore animation was thus given:—Artificial respiration should always be first tried, in the hope that there may still be some remaining action of the heart. Artificial respiration after fifteen minutes need be used no longer. It will simply cause emphysema of the lungs. In every case where artificial respiration is used, it would be a great advantage to increase the tem-

perature of the air inspired to 130° Fahr. In the receiving-houses for the recently dead it would be advisable to have a room the air of which was heated to 130° or 150° for inspiration. If electricity be used, the feeble electro-magnetic current is best. In application, the positive pole, insulated except at the extreme and probe-pointed end, should be passed down the external jugular vein to the heart, or through one of the arteries; the negative pole, insulated also to the tip, should be passed through the thoracic wall to the external surface of the cardiac structure. The last means, and the most promising, consists in endeavouring to inject the muscular structure of the heart with fresh, warm blood, artificial respiration being meanwhile sustained. This injection can only be done by directing a stream of blood through an artery towards the heart. It remains still a desideratum to invent a fluid easy of construction out of the body, which shall in its properties in some measure represent blood itself.

Diagrams of the Nerves of the Human Body; exhibiting their origin, division, and connexion, with their distribution to the various regions of the cutaneous surface and to all the muscles. By Mr. Wm. H. Flower, F.R.C.S., Assistant-Surgeon to the Middlesex Hospital, &c. (Folio, London, Churchill, 1861.)

Every student has found out, or will soon find out, that it is no easy task to "learn the nerves;" every practitioner of medicine will acknowlege that there is a fatal facility for forgetting what he once knew of this subject. Mr. Flower will be acknowledged, as soon as he is known, as the welcome friend of both student and practitioner, for his diagrams show at a glance the origin and distribution of all the nerves of the body which have received distinctive appellations, and (for greater facility of reference) the names of the muscles to which the motor branches are distributed are printed in red letters.

On the Physiology of Sleep. By Mr. A. E. Durham. ('Proc. of the British Association for the Advancement of Science,' Session 1860. 'British Med. Journal,' July 14th, 1860.)

Mr. Durham defines sleep to be that state of cerebral repose which is essential to the nutritive repair of the brain-substance—a state, therefore, in which consciousness, sensation, and volition (the great manifestations of the brain's activity) are temporarily suspended; but so suspended as to be easily restored by the action of stimuli, external or internal. By experiments upon animals, and ocular examination of the appearances of their brains under different degrees of excitement and during sleep, Mr. Durham has obtained sufficient evidence that every variation in functional activity and repose is characterised by a change in the condition of the cerebral circulation. The removal of portions of bone by means of the trephine, and the [illegible]on of watch-glasses, rendered the surface of the brain easy [illegible] It appears from investigations thus con-

ducted, that during sleep the brain is comparatively bloodless; the veins are *not* distended, and the capillaries contain comparatively little corpusculated blood. During waking, and still more under considerable excitement, the circulation is much more active. Arteries, capillaries, and veins, are all highly injected with rapidly moving blood. The hypothesis that venous pressure is the cause of sleep is thus shown to be untenable. The author's own hypothesis, and his explanation why the different states of the circulation necessarily correspond to the different degrees of functional activity, are stated and supported by experimental evidence. The correlation of the intracranial circulation with that of other parts and organs is fully dwelt upon; and an explanation of many of the phenomena of sleep and sleeplessness is deduced. The various kinds of coma and lethargy are proved to be distinguishable from healthy sleep, not only by their results, but also by the appearances of the brain during their continuance. The nature of dreams, in reference to states of the cerebral circulation, is touched upon; and many practical suggestions are made as to the best methods for inducing sleep under various different conditions of wakefulness.

On the Distribution of Nerves to the Elementary Fibres of Striped Muscle. By Dr. BEALE, Professor of Physiology in King's College, London, &c. ('Proc. of the Royal Society,' June 19th, 1860.)

The following is a summary of the most important facts elicited in this inquiry:

1. That nerve-fibres in muscle and in many other tissues, if not in all, may be traced into, and are directly continuous with, a network formed of oval nuclei and intermediate fibres.

2. That the organs by which nerves are brought into relation with other textures, and the agents concerned in the development of nerves and the formation of new fibres, are the little oval bodies or nuclei which are present in considerable number in the terminal ramifications of all nerves. A great number of these bodies is associated with exalted nervous action, while, where they are sparingly found, we may infer that nervous phenomena are only imperfectly manifested.

3. That every elementary fibre of striped muscle is abundantly supplied with nerves, and that the fibres of some muscles receive a much larger supply than others.

4. That the nerves lie, with the capillaries, external to, but in close contact with, the sarcolemma. They often cross the muscular fibre at right angles, so that one nerve-fibre may influence a great number of elementary muscular fibres. There is no evidence of their penetrating into the interior of the fibre.

The paper is illustrated with drawings, most of them magnified 700 diameters

Remarks on Colour-blindness. By Sir JOHN F. W. HERSCHELL, Bart. ('Proc. of the Royal Society,' vol. x, p. 72, 1860.)

Sir William Herschell's remarks are extracted from a report on a paper by Mr. Pole on the same subject ('Proceedings,' vol. viii, p. 172, and vol. ix, p. 716), and communicated at the request of the President and Council of the Royal Society. Sir William considers that this paper is, in many respects, an exceedingly valuable contribution to our knowlege of this curious subject, because it is the only clear and consecutive account of that affection which has yet been given by a party affected, in possession of the knowledge of what has yet been said and written on it by others, and of the theories advanced to account for it, and who, from general education and habits of mind, is in a position to discuss his own case scientifically.

Mr. Pole refers all his perceptions of colour to three primary or elementary sensations, which may be red, blue, and yellow, as Mayer proposed, or red, green, and violet, as suggested by Dr. Young. It is as necessary to distinguish between our sensations of colour as it is to distinguish between bitterness, sweetness, sourness, &c. In looking at green, Mr. Pole does not recognise the sensation either of blue or yellow, but something *sui generis;* and Mr. Maxwell has lately announced his inability to form green by the combination of blue and yellow. The union on the retina of the yellowest yellow and the bluest blue, in such proportions that neither shall be in excess, so as to tinge the resulting light either yellow or blue, is *not green, but white.*

From numerous facts Sir William concludes—1. That in no case can the sensation of green be produced by the joint action on the eye of two lights, in neither of which, separately, prismatic green exists. 2. That the joint action of two lights, separately producing the most lively sensations of blue and yellow, does not give rise to that of green, *even when one of them contains in its composition the totality of green light in the spectrum.* 3. That all our liveliest sensations of yellow are produced by the joint action of the rays, of which those separately exciting the ideas of red and green form a large majority; and that a decided yellow impression is produced by the union of these only. Sir William adds, further, that from these premises it would seem the easiest possible step to conclude the non-existence of yellow as a primary colour. But this conclusion he is unable to admit in the face of the facts—(1) that a yellow ray, incapable of prismatic analysis into green and red, may be shown to exist, both in the spectrum and in flame in which soda is present; and (2) that neither red nor green, as sensations, are in the remotest degree suggested by this yellow in its action on the eye. Whether under these circumstances the vision of normal-eyed persons should be termed trichromic or tetrachromic, seems an open question; but that Mr. Pole's vision is *di*chromic there can be no doubt.

(1.) *On the production of Cataract in Frogs by the administration of Sugar.* By Dr. S. Weir Mitchell; and (2.) *The Synthesis of Cataract.* By Dr. B. W. Richardson. (1 'Amer. Quart. Journ. of Med. Science,' Jan., 1860; 2. 'British Med. Journal,' 31st March, and 21st April, 1860.)

Dr. Mitchell's paper contains an account of the discovery of a very remarkable fact—namely, that a form of cataract is produced by the injection of syrup into the subcuticular sacs of frogs. The experiments are very conclusive, and the conclusions to which they lead are—that sugar in large quantities destroys the life of a frog; that an abundant supply of water frequently enables the frog to eliminate the sugar and escape death; that the formation of cataract is one of the most striking symptoms of the sugar-poisoning; that the cataract is due to mechanical disturbances of the form and relative position and contents of the compound tubes of the lens. Dr. Mitchell also points out the possibile bearing of these facts in explaining the frequent occurrence of cataract in cases of saccharine diabetes.

Dr. Richardson was led to pay attention to the subject by the paper just quoted, and his experiments are not only entirely confirmatory of Dr. Mitchell's observations, but they are an extension of these. The leading facts adduced by Dr. Richardson may be thus summed up:—1. When from one and a half to two drachms of syrup are injected under the skin of a frog, the body of the animal first becomes enlarged from exosmosis; and afterwards, in from twelve to thirty-six hours (the enlargement having meanwhile disappeared), cataract—usually in both eyes—is the result. This (confirmed by twenty experiments) is identical with the result previously obtained by Dr. Mitchell. 2. If the frog, after injection, is freely surrounded with water, it recovers without cataract—a fact observed also by Dr. Mitchell. 3. If, immediately after the lens becomes opaque, the animal is surrounded by water, the cataract may be made to disappear. This was confirmed by three experiments. 4. The cataract, being fully developed, remains permanent; the animal apparently recovering its general health, but being entirely blind. 5. When the cataractous lens is removed from the animal, the opacity may be seen to have commenced either at the posterior part of the lens, spreading circumferentially, or at the anterior part, spreading backwards. The opacity is diffused, but it does not reach the centre of the lens. Similar observations were made by Dr. Mitchell, except that he traced the opacity from the posterior surface in all cases. The capsule of the lens seems clear (Mitchell). A similar opacity of the lens may be produced in the eye of a sheep, immediately after death, by the injection of syrup into the anterior chamber. In these conclusions, the results of both authors were in the main the same. 6. All varieties of sugar—cane, grape, and milk—produce the same result; and frogs were presented, with cataract induced by the injection of syrups of each of these sugars. 7. The form of cataract does not vary in any case. 8. After several experiments, it was found that a

syrup of cane or grape-sugar, of specific gravity 1150, was the most practical; and of milk-sugar, that of specific gravity 1120. 9. Injection of gum-water does not produce cataract. In one case, after the injection of albumen, it was believed that some opacity was produced; but a second experiment did not confirm this result. 10. Sugar-cataract is producible in other animals. In a fresh-water fish, placed in water brought to the specific gravity of 1070 by cane-sugar, perfect cataract was produced on one side, the other side seeming to escape altogether. A second fish, placed in the same solution, lived in it for several hours, but showed no cataract. In guinea-pigs, rabbits, and dogs, attempts had been made to produce the sugar-cataract by injecting syrup into the peritoneum. Great difficulties, however, were experienced in these experiments; for it was found that, if an overdose of syrup were injected, the animal died rapidly, as from hæmorrhage, through rapid transudation of water from the blood into the peritoneal sac. If, again, small quantities were introduced, the sugar was rapidly eliminated by the urine, in which it was found present in one case within an hour after the injection of grape-sugar syrup. But, by throwing an ounce of syrup of grape-sugar into the peritoneum of a rabbit, and repeating it after ten hours, distinct opacity of both lenses was produced. The animal, however, died after a third injection, the opacity increasing till death. Dr. Richardson considers the cause of the cataractous change to be purely osmotic; and is due, that is to say, to an excessive transudation of water from the lens to the surrounding fluids, upon which the component parts of the lens are disarranged, and opacity the result. This form of cataract, while it presented the appearances of common cataract, connects itself intimately, as Dr. Richardson supposes, with the facts which had been made out in the etiology of the disease, as to the coexistence of diabetes and cataract. As a point bearing on the treatment of cataract, Dr. Richardson says that, inasmuch as temporary opacity produced by exposure of the lens to syrup was removable by an after exposure to water (*i.e.*, by changing the position of the medium surrounding the lens), it is worthy of consideration whether an operation for letting out the aqueous humour by a small opening, and refilling the anterior and posterior chambers with distilled water, might not lead to removal of the cataractous condition in the *earliest* stages.

Dr. Richardson has also performed experiments with other substances, which extend the sphere of vision opened out to us by the observations of Dr. Mitchell.

Two experiments were performed with *glycerine*. In the first, one drachm of glycerine being injected into the dorsal sac of a frog, there was produced, in three hours, posterior opacity of the lens. In a second experiment, a drachm and a half was injected, which caused death in six hours, without cataract.—*Alcohol.* A drachm of absolute alcohol, injected into the dorsal sac of a frog, caused death in two hours, with extraordinary shrinking of the body, and distinct double cataract posteriorly. Half a drachm of absolute alcohol, injected into the dorsal sac of another frog, caused death in six hours, with distinct cataract, but, singularly enough, on one side only.

The cataractous condition produced by glycerine and alcohol resembled that produced by sugars.—*Chloride of sodium.* By introducing into the dorsal sac of a frog from two to three drachms of a solution of chloride of sodium, of specific gravity 1150, the animal was rendered tetanic, and, in twenty minutes, the limbs were drawn immoveably towards the body, but jactitation of the muscles continued for an hour, when the animal died. Distinct cataract was produced in both lenses before death. In another experiment, a drachm and a half of the solution was used; the same symptoms followed, but more slowly. Distinct cataract resulted. In a third case, one drachm of the same solution was injected; death occurred in two hours, marked cataract having previously appeared. In a fourth case, half a drachm was used; death occurred during the third hour, with the same signs of cataract. In a fifth case one drachm of solution of chloride of sodium, of specific gravity 1050, was thrown in. In three hours there was distinct double cataract; the animal was immensely shrunken, and the skin was dry, almost like parchment. Placed in water, the animal recovered; and, the water being frequently changed, the cataract entirely disappeared in fifty-three hours. Cataract was reproduced in this animal, again removed, and again reproduced. The character of the cataract produced by chloride of sodium seems to differ materially from that produced by sugar. The lens is much firmer, and the opacity extends through the whole structure. The lens resembles one that has been boiled.—*Iodide of potassium.* From the chemical analogy between chloride of sodium and iodide of potassium, Dr. Richardson has used the latter salt in the same way; the general symptoms produced were very similar, except that the cataractous condition did not result, at least so far as his experiments had gone.—*Acid urate of soda.* From the fact of the insolubility of the urates, Dr. Richardson says that he did not expect that a cataract could be produced by the introduction of this substance into the blood. He did not conceive, that is to say, that any osmosis could be established by that salt: but an accidental experiment had led him to try what could be done in this direction. On March 2d of the present year, he had commenced to administer to a well fattened and healthy bitch the acid urate of soda, in doses of two drachms daily, with her food. His object was, to ascertain whether any affection of the joints would be produced. At this time, she had taken nearly a pound of the urate, with no effect whatever on the joints; but, within the last three weeks, with distinct and rapidly increasing indications of double cataract. Acting on this suggestion, the author had tried to produce the same effect on frogs, by charging them with the urate of soda, but without any similar result. The occurrence of cataract in the larger animal might therefore be a coincidence; but Dr. Richardson was inclined to think that it was an indirect effect of the urate; that is to say, he believed that the urate was decomposed in the digestive process, and changed probably into a lactate or other soluble salt of soda, which, being conveyed into the blood, produced the cataractous condition. In proof of this, he showed that a solution of lactate of soda, of specific gravity 1060, produced cataract in frogs

when injected. Dr. Richardson drew the following conclusions from the experiments:—1. In addition to the sugar-cataract, there is producible what may be called a saline cataract. 2. The appearances of the cataracts as produced by different solutions vary; thus the cataract produced by chloride of sodium differs from that produced by grape-sugar. 3. The same cataractous appearance can be produced in a clear lens, after removal from the body, by immersion in solution of sugar, salines, &c. 4. As the cataractous appearance is modified by the density of the producing body, and is removable by reversing the conditions which have led to it, and as it is producible in a clear lens removed from a body, it is a demonstration that the cataract induced in the different animals is a purely physical—that is to say, osmotic—change.

On the Immediate Cause of Muscular Contraction and Sensation. By Dr. RADCLIFFE, Physician to the Westminster Hospital, &c. ('Epileptic and other Convulsive Affections of the Nervous System,' 3d edit., post 8vo, London, Churchill, 1861, p. 132.)

In the physiological preliminaries of the third edition of the work whose title has just been quoted, are some speculations on the immediate cause of muscular contraction and sensation to which we would wish to direct attention, though it is difficult to give any just idea of their real value without the context. Dr. Radcliffe supposes that *instantaneous currents of high tension* (*extra-currents and induced currents*) must be developed whenever the nerve-current or muscular current is interrupted in any way, and that these instantaneous high-tension extra-currents and induced currents are the cause of muscular contraction when developed in the muscles, and of sensation when developed in the sensorium.

1. When, for example, the trunk of a living nerve is acted upon by the induced currents proceeding from an induction coil, a mechanical commotion is set up by these currents in the part of the nerve acted upon, which commotion must have the effect of weakening the nerve-current in this part, partly by deranging the proper relative position of the electromotive molecules of the nerve, and partly by disturbing, either temporarily or permanently, the composite structure of these molecules; for if, as is certainly the case, living nervous tissue is composed of an infinite number of these electromotive molecules; and if, as is no less true, the nerve-current is the sum of the actions of all these molecules, it follows that the nerve-current will be weakened when a number of these molecules are prevented from acting. This weakening of the nerve-current must also lead to further weakening, by the development of *extra-current* within the nerve; for if, as is certainly true, the nerve-current is analogous to the ordinary galvanic current, any change in its strength must be attended by the development of instantaneous currents of high tension in the nerve itself (*extra-currents*) and in the neighbourhood of the nerve (induced currents); and if, as is no

less true, these extra-currents are analogous to induced currents in the matter of instantaneousness and high tension, the development of these extra-currents in the nerve must set up a mechanical commotion in the part which must weaken the nerve-current for the moment, by deranging and disturbing the electro-motive molecules of the nerve. It is evident, also, that this *local* weakening of the nerve-current may produce a corresponding weakening, and a corresponding development of instantaneous currents of high tension, extra-currents and induced currents, *throughout the whole course of the nerve*, provided the nerve retain its natural properties as a conductor. When, therefore, the trunk of a living nerve is acted upon by the induced currents proceeding from an induction coil, this action will result in the weakening of the nerve-current throughout the whole course of the nerve, and in the consequent development to the same extent of instantaneous currents of high tension, not only in the nerve itself (extra-currents), but in the neighbourhood of the nerve (induced currents). The result is one, indeed, which may issue in the development of induced currents in the muscle to which the nerve is distributed on the one hand, and in the sensorium on the other hand (for muscle and sensorium are within the range of these induced currents, inasmuch as they are in the neighbourhood of the nerve); and this being the case, there is in these induced currents, thus developed, a tangible cause for the muscular motion and sensation in distant parts, which result from the action of an induction coil upon the trunk of the nerve.

Nor is the case different when the trunk of the nerve is exposed to other actions which may bring about muscular contraction or sensation. When, for example, the nerve is pinched between a pair of forceps, there will be a certain derangement and disturbance of the electromotive molecules of the part pinched, which will result in the weakening of the nerve-current, and in the consequent development of induced currents in the neighbourhood of the nerve. Or when the nerve is exposed to the action of salt water, the action of a certain number of electromotive molecules will be interfered with—by abstracting water from the nerve, by combining chemically with the nerve, or in some more recondite manner—and in this way the same results will follow, namely, weakening of the nerve-current, and consequent development of induced currents in the neighbourhood of the nerve.

Nay, it is possible to apply the same principle of interpretation to the explanation of voluntary muscular contraction, for each effort of the will may involve an equivalent expenditure of nerve-current, which may cause the development of induced currents in the contracting muscles by setting up a movement in the nerve-current of the nerves connecting the muscles with the volitional centre.

It may be urged, however, that the nerve-current is too feeble to bring about such results, and at first sight there appears to be no little force in this objection. The nerve-current, as measured by the galvanometer, is certainly very feeble, but the portion thus measured is as certainly not the whole nerve-current. On the contrary, this portion may, for anything we know, be altogether insignificant

when compared with the amount which is hemmed in within the coats of the nerve, and which is prevented from overflowing by the imperfectly conducting properties of these coats. It would seem also as if a proof positive as to the possibility of strong induced currents being derivable from the nerve-current may be found in the discharges of the torpedo and other electrical fishes, for there is good reason to believe that these discharges are nothing more than induced currents arising at the instant from movements in the currents of the nerves belonging to the electrical organs.

Upon bringing the opposite polar surfaces of the electric organ of a torpedo or other electric fish into connexion with a galvanometer, the needle gives evidence of a momentary current when the discharge takes place—a current of high tension, as the feelings will sufficiently show if the experimenter care to include himself in the circuit; but in the interval between the shocks the needle remains at zero or thereabouts. Upon further inquiry there is reason to believe that the electricity of the electric organ is supplied by the nerves, and received at the instant when it is wanted. The rich supply of nerves to the transverse partitions between the prisms, the instant renewal of the discharge when the animal is provoked, or when the nerves of the electric organs or the nervous centres connected with those nerves are incited in any manner, the storm of shocks attending the action of a poison which, like strychnia, has a special action upon the nervous system—all point to the nervous system as the source from which the electric organ derives its electricity. The position of the needle of the galvanometer at zero or thereabouts in the intervals between the shocks, and the absence which there must be in the moist membranous organ of an animal living in water of the means of insulation, without which it is simply impossible to suppose that electricity of high tension could remain stored up beyond a single instant, point as plainly as can be to the electricity being received by the electric organ at the instant it is wanted. The facts, indeed, are calculated to show that instantaneous currents of high tension may originate in the action of the nerves of the electric organ. They show, as it would seem, that there was good ground for supposing, as was supposed, that induced currents might originate in movements of the nerve-current, for the whole history of the discharges of the torpedo and other electrical fishes is intelligible upon the theory of induced currents arising in movements of the currents of the nerves of the electric organ, and altogether unintelligible upon any other theory. In a word, they furnish an answer to the objection that the current in the musculo-motor nerve is too feeble to act upon the muscle by the induced currents to which it may give rise, for be this current never so feeble, it is at least as strong as the current of the nerve of the electric organ.

There are, moreover, certain analogies which justify an appeal to these facts in the present case. Thus, the nerves of the electric organ arise from the anterior tract of the spinal cord, and terminate in loop-like plexuses; and so do the nerves of the muscles. The electric organs are paralysed by the division of their nerves; and so

are the muscles. The electric organs are made to deliver their shock by inciting the ends of the divided nerves which remain in connexion with the organ, and the discharge is limited to the region to which the incited portion of nerve belongs; the muscles are made to contract under similar circumstances, and the contraction is equally localized. The electric organs are exhausted by exercise and recruited by rest; so are the muscles. The action of strychnia upon the electric organs and upon the muscles agrees in this, that it gives rise to a storm of involuntary tetanic spasms in the one case, and to a storm of involuntary discharges in the other. And, lastly, there is a similar agreement in the effects of the action of a galvanic current upon the nerves of the two organs, for the attending shocks or contractions are equally confined to the moments when the circuit is closed or opened, and equally banished from the interval during which the current is passing continuously.

It would seem, also, as if the phenomena of *secondary contraction*, discovered by MM. Matteucci and Du Bois-Reymond, may be looked upon as a direct argument in favour of the sudden passage of currents of high tension in the neighbourhood of a musculo-motor nerve concurrently with that change in the nerve which determines contraction. When three or four rheoscopic limbs are arranged in a series in which the nerve of the second is placed upon the muscles of the first, the nerve of the third upon the muscles of the second, and so on, nerve upon muscle for the succeeding limb or limbs, secondary contraction takes place in the second, third, or fourth limb, whenever the first limb is made to contract. Secondary contraction is also exhibited in a rheoscopic limb of which the nerve is laid upon the *nerve* of another rheoscopic limb, when the latter limb is thrown into a state of contraction. The phenomenon is very curious, but it is one which may be readily explained by supposing that the contraction is attended by induced currents which pass, as such currents may and must pass, beyond the range of the contracting muscle into that of the nerve lying upon the contracting muscle, and *vice versâ*. It is one which appears to admit of no other explanation than this, for in the case where the contraction is produced by placing nerve upon *nerve*, the only other explanation which deserves attention is excluded, namely, that which supposes that the nerve of the limb exhibiting the secondary contraction has been incited mechanically by the motion of the contracting muscle. In a word, the phenomenon of secondary contraction, interpreted by what has gone before, would seem to furnish a direct argument in favour of the actual presence of induced currents in the neighbourhood of the nerve, when there is that change in the nerve-current which determines contraction. It would seem, indeed, that the nerve is for the nonce placed in the position of the electric organ, specially so called, and that the secondary contraction is the natural effect of the discharge.

2. Nor is the case in any sense different when muscle is directly exposed to the action of the various agents which produce contraction, for the muscular current consists in the combined action of the electromotive molecules of the muscle, and these agents, each

and all, may be supposed to weaken this current, and so bring about the development of induced currents, by deranging and disturbing the molecules in the part immediately acted upon.

With reference to the *modus operandi* of these induced currents in producing contraction, Dr. Radcliffe has also a view which harmonizes with his particular theory of muscular motion—a view which does not call in the aid of muscular irritability. He supposes, in fact, that these induced currents may derange and disturb the electromotive molecules of the muscle in the same way as that in which the induced currents proceeding from the coil have been supposed to derange and disturb the electromotive molecules of the nerve,—that the muscular current, which is the sum of the actions of these molecules, may be weakened by this derangement and disturbance,—and that the muscle may contract, not because the induced currents have acted as a stimulus to a vital property of irritability, but because they have for the moment suspended that muscular current which previously antagonized contraction. But for further information upon this point, as well as for the latest statement of the theory in question in all its bearings, we must content ourselves by referring to the edition of the work whose title is at the beginning of this article.

On the action of Interrupted and Continuous Electrical Currents upon Animal Bodies. By M. A. Chauveau, Superintendent of the Anatomical and Physiological Department of the Imperial Veterinary School at Lyons. ('Journal de la Physiologie,' July and October, 1859; and January, April, and July, 1860.)

It is difficult to give a clear analysis of these most important investigations—impossible in the short space at our disposal. It is necessary, indeed, that every one interested in the subject should refer to the original papers, and the free sketch which we propose to give is by no means intended to do away with this necessity. M. Chauveau investigates in turn the action of induced currents, of discharges of statical electricity, and of continuous currents.

1. Upon taking hold of the poles of an ordinary induction coil, the well-known shock is experienced. When the current is powerful, this shock passes through the body; when less powerful, the hands only are affected; when sufficiently feeble, the effect is limited to the hand out of which the current passes—the hand which grasps the negative pole, or zincode. And so also for every person when several persons are included in the circuit, the current, according to its strength, making itself felt through the whole body of each person, or in the two hands of each person, or simply in the one hand by which it passes out of each person.

Nor is the case different when the action of an induced current is directed specially upon muscle or musculo-motor nerve.

Applying a sufficiently feeble current directly to a muscle, the contraction which follows is limited to the fibres in the neighbourhood of the negative pole; increasing somewhat the strength of the

current, the contraction shows itself also in the neighbourhood of the other pole; using a still stronger current, the whole muscle is thrown into a state of contraction. And when several muscles are included in the same circuit it is still the same, each muscle being convulsed throughout its whole substance, or in the neighbourhood of the two poles, or only at the negative pole, according as the strength of the current is properly regulated.

Applying the poles of the coil to the facial nerves of a horse (the facial nerves, from their superficial position, are especially suited for the experiment), the negative pole being upon one nerve and the positive pole upon the other nerve, the facial muscles are convulsed on one side only if the current be sufficiently weak. If, indeed, the current be sufficiently weak, the convulsion is confined to the side of the face from the nerve of which the current makes its exit—the nerve which lies under the negative pole, or zincode. When, moreover, the facial nerves of several horses are included in the same circuit, it is still the same, the contraction being on both sides of the face of each horse if the current be of ordinary strength, or only on the side of the face of each horse from the nerve of which the electricity makes its exit, if the current be sufficiently feeble.

In the experiment with a *feeble* current upon the facial nerve of a horse it is found also that the positive pole may be moved to the same side as the negative pole, and placed so as to cause the current to pass up or down or across the nerve, without producing any change in the result so far as contraction is concerned. What is necessary to contraction in this case is for the negative pole to be upon the nerve, and if this pole be in this position it matters not where the positive pole is placed.

Comparing the induced current which attends upon the beginning of the inducing current, with that which attends upon the ending of the inducing current, the latter, as might be expected from its greater strength, produces a more marked action upon the muscle, but with this exception there is no difference whatever between the two induced currents.

2. The physiological effects produced by *discharges of statical electricity* are in all particulars analogous to those which are produced by the action of induced currents. If the charge be sufficient and the discharge be made by the two hands the shock extends across the body; if the charge be smaller, the effects of the discharge may be limited to the two hands; if the charge be sufficiently reduced in strength, the only sign of the discharge is felt in the hand out of which the electricity issues—the hand in relation to the negative pole. And so, also, when the discharge is made to tell upon a single muscle or nerve, or upon several persons or muscles or nerves included within the same circuit. The muscular phenomena attending upon discharges of statical electricity are indeed strictly analogous to those which attend upon the passage of induced currents, and—what is particularly to be noticed—this analogy does not fail in the matter of the contraction being irrespective of the course of the discharge along the nerve.

3. The physiological effects of a *galvanic current* are of a more

complex character, but with a little attention they are reducible, not only to rule, but to the same rule.

If, for example, the poles of a Daniell's cell be applied to the cheek of a horse, so that one of them is upon the trunk of the facial nerve and the other somewhere else, the facial muscles contract when the negative pole is upon the nerve, and not when the positive pole is in this position, *if the current passing be sufficiently weak.* It is of no moment where the positive pole is placed. It may be placed so as to cause the current to the negative pole to pass up the nerve or down the nerve or across the nerve, any way or every way, and all that appears to be essential to the production of contraction in this case is to have the negative pole upon the nerve.

Nor are we at liberty to suppose that the direction of the current is of greater moment in that common experiment upon the nerve of a detached frog's leg in which it is held to be all important. In this case, at first, the muscles contract at the beginning as well as at the ending of a current of ordinary strength; a little later, and contraction is only at the beginning or only at the ending of the current —at the beginning if the direction of the current along the nerve be centrifugal or *direct*, at the ending if the course of the current along the nerve be centripetal or *inverse*. At this period, indeed, it seems as if the direction of the current was all important; but this notion is contradicted by several of the new facts which are furnished by M. Chauveau.

One of these new facts is this. The hinder half of a frog is prepared as Galvani was wont to prepare it—the thighs, that is to say, are completely separated by snipping through the pelvic structures at the median line, and the lumbar structures are removed so as to make the lumbar nerves the only bond of connexion between the thighs and the remaining fragment of the spine. The two limbs, thus prepared, are then hung astride upon the edge of a plate of glass, and a *feeble* galvanic current is passed through both sets of lumbar nerves, by applying one pole to one set, and the other pole to the other set. An arrangement is made, that is to say, by which the current passes up the nerves on one side, through the connecting piece of spine resting upon the edge of the insulating plate of glass, and down the nerves on the other side,—by which the current is *inverse* in one set of nerves and *direct* in the other set. The result of this, the first stage of the experiment, is—contraction at the beginning of the current in the limb along the nerves of which the current is *direct*, contraction at the ending of the current in the limb along the nerves of which the current is *inverse*. It seems as if the direction of the current is essential to the result, but such a notion is inconsistent with what remains to be told. In the first stage of the experiment the two poles were separated, one being upon one set of lumbar nerves, the other upon the other set; in the second stage of the experiment, which has now to be explained, both poles are placed upon the same set. They are placed sometimes in one position, sometimes in another, so that the current along the intervening por[illegible]nerve is sometimes direct, sometimes inverse, and now the [illegible]traction at the beginning of both currents,

and not contraction at the beginning of the direct and at the end of the inverse current, as it was in the first stage of the experiment.

The same frog which has served for the demonstration of the fact which has just been mentioned will serve also for the demonstration of that which has now to be noticed. In this case the sciatic nerve of one of the limbs is exposed in its inferior third, and the corresponding portion of the thigh is cut away so as to leave the leg hanging to the thigh by the nerve simply. This being done, and a *feeble* direct current being passed along the nerve by placing the negative pole upon the sciatic and the positive pole upon the lumbar nerves, the contraction which results in the muscles of the leg is at the commencement of the current, and at this time only. In the next place, a *feeble* inverse current is passed along the nerve by placing the positive pole on the sciatic and the negative pole on the lumbar nerves, and the contraction which results is still at the commencement of the current and at this time only, but it is now exhibited in the muscles of the thigh, as well as in the muscles of the leg. As in the last experiment, contraction happens on the closure of the circuit irrespectively of the direction of the current, and the presence of contraction in the leg simply, or in the thigh as well as in the leg, would seem to be determined by the position of the negative pole upon the nerve.

In demonstrating the third and last fact which has to be noticed here, it is necessary to expose the sciatic nerve of a frog, to raise it in a loop over one of the poles of a Daniell's cell, and then to place the other pole within the same loop so as to make it rest upon the muscles of the thigh in a line directly under the first pole. If the nerve be looped over the positive pole, a *direct* current (the current employed is still a very *feeble* one) passes in the portion of nerve intervening between the pole and the muscles of the leg, and, according to theory, it is to be expected that the muscles of the leg will contract when the current begins to pass. In fact, however, these muscles are alike quiescent at the beginning and at the ending of the current. If, on the other hand, the nerve be looped over the negative pole, the current along the portion of nerve intervening between the pole and the muscles of the leg is *inverse*, and hence it is to be expected that these muscles will contract when the current ceases to pass. This is what ought to be the case according to theory; what actually happens is that these muscles contract when the current begins to pass, and then only. It is still the same—contraction when the negative pole is on the nerve, and not when the positive pole is upon the nerve.

Subjecting a musculo-motor nerve to the action of a somewhat stronger galvanic current than that which was employed in these experiments, the muscles are seen to contract at the beginning and at the ending of the current. Proceeding with the experiment, and still using the same current, a change is presently noticed in which the contraction is found to forsake the ending or the beginning of the current, and to occur at one of these times only. Now how is this? Why should there be this change? Why should contraction be present only at the moments when the current begins and ends,

and absent in the interval during which the current is passing quietly and continuously? M. Chauveau has an answer to these questions—an answer which refers partly to the constitution of the current acting, and partly to the changing condition of the nerve acted upon.

That there is something peculiar in the galvanic current at the moments when the current is closed and opened is more than probable. There is, indeed, reason to believe that current electricity begins and ends in rushes of high tension which are of the same character as induced currents or discharges of statical electricity. Thus: a stretched wire conductor is thrown into sonorous vibrations at the moments when the galvanic circuit is opened or closed just as it would be by induced currents or by discharges of statical electricity. Thus again; an ordinary wire experiences sudden changes in length and breadth at the same moments, just as it would do under the action of these currents or discharges. The spark at making and breaking the circuit would also seem to tell the same tale, and so may the induced currents which attend upon the beginning or ending of the galvanic current, for it is difficult to understand how these high-tension induced currents could originate except as outflowings of currents of the same character as to tension. There are reasons, indeed, and good reasons too, for supposing that the galvanic current begins and ends in instantaneous rushes of electricity of high tension—rushes to which Professor Faraday has given the name of *extra-currents*.

These extra-currents are generally spoken of as agreeing with induced currents in their course and relative strength, and those who (Dr. Radcliffe among the number) have sought to explain the contractions attending upon the closing and opening of the galvanic circuit by connecting them with instantaneous currents of high tension, prevailing at these moments, have spoken of these currents as being induced currents. As M. Chauveau shows, however, there is good reason for supposing that extra-currents differ from induced currents both in their course and relative strength, and that the recognition of this difference is of fundamental importance in explaining many of the points which have to be explained in due time.

In determining the course and relative strength of the extra-currents, M. Chauveau appeals to the muscular movements which attend upon the beginning and ending of a galvanic current when a musculo-motor nerve is included in the circuit. Placing one pole upon the right facial nerve of a horse, and the other pole upon the left facial nerve, and using a *weak* current, he finds that the contraction attending upon the closure of the circuit is on the side from which the galvanic current is making its exit—the side of which the nerve is under the negative pole; and hence he argues that the *initial* extra-current (*initial*, because attending upon the beginning of the galvanic current) must make its exit from the nerve into the negative pole, and that, so doing, it must pass in the same direction as the galvanic current. He finds, also, that the contraction which attends upon the opening of the circuit in the same experiment is on

the opposite side of the face—the side of which the nerve lies under the positive pole; and for the same reason he argues that the *terminal* extra-current (*terminal*, because attending upon the ending of the galvanic current) must make its exit from the nerve into the positive pole, and that, in order to this, it must have passed in a contrary direction to that of the galvanic current. And this must be allowed to be a fair inference from what has gone before, for as with *weak* induced currents and *weak* discharges of statical electricity, so with *weak* extra-currents, it is to be expected that only that nerve will be acted upon from which the electricity makes its exit. With the same experiment M. Chauveau also finds that the contraction attending upon the closure of the circuit is more marked and much slower to die out than the contraction attending upon the opening of the circuit, and hence he argues that the initial extra-current is more powerful than the terminal.

Thus exhibited, then, the extra-currents differ altogether, both in course and relative strength, from induced currents. The initial extra-current is in the same direction as the galvanic current, the initial induced current is in the opposite direction. The terminal extra-current is in the opposite direction to that of the galvanic current, the terminal induced current is in the same direction as the galvanic current. The initial is the stronger of the two extra-currents; the terminal is the stronger of the two induced currents.

Assuming, then, the existence of extra-currents such as these at the beginning and ending of the galvanic current, and knowing the marked influence of induced currents and discharges of statical electricity in producing contraction, M. Chauveau concludes that high tension is a necessary quality in the electricity which produces contraction, and that, for this reason, contraction is present at the beginning and ending of the galvanic current, because it is only at these moments that the electricity of the current has the requisite degree of tension, and absent in the interval during which the galvanic current is passing quietly and continuously, because the electricity then passing is deficient in tension. And certainly it is difficult to connect the power of producing contraction with the polar, or thermal, or chemical workings of electricity. For is it not true that these workings are at a minimum where (as in induced currents and discharges of statical electricity) the power of producing contraction is at a maximum? And is it not equally true that these workings are at a maximum where (as in the ordinary galvanic current between the moments of beginning and ending) the power of producing contraction is altogether absent? Moreover, M. Chauveau believes that contraction is produced by the passage of high tension electricity in the same way as that in which it is produced by the pinch of a forceps or the prick of a knife, that is, by the mechanical commotion which is set up in the nerve or muscle, one or both; and this idea has much to recommend it, for a current or discharge which, when strong, will pierce cardboard and window-glass, or bend, break, shiver, and pulverise a conductor of insufficient dimensions, must give rise, even when very weak, to no small amount of mechanical commotion in a living nerve and muscle.

The change which comes over the order of contraction when a musculo-motor nerve is acted upon for some time by an ordinary galvanic current varies in different cases, but the simplest and most typical case is that in which the nerve of a rheoscopic limb is subjected to this treatment. In this case, what happens may be conveniently divided into four periods, as in the following table:

	Direct Current.		Inverse Current.	
	Beginning.	Ending.	Beginning.	Ending.
First period	Contraction	Contraction	Contraction	Contraction
Second period	Contraction	—	—	Contraction
Third period	Contraction	—	—	—
Fourth period.....	—	—	—	—

In the first period, contraction occurs at the beginning and ending of the current, and it is of no moment, so far as this result is concerned, whether the course of the current along the nerve be inverse or direct. In the second period, contraction occurs only at the beginning of the direct and at the ending of the inverse current. In the third period, contraction is absent except at the beginning of the direct current. In the fourth period, contraction has ceased altogether to attend upon either current. It seems as if the direction of the current along the nerve was an essential element in the problem; but in reality this is of as little moment here as heretofore. The problem is somewhat complicated, but, as M. Chauveau shows, it is one which may be solved by remembering what has just been said about extra-currents, and by realising the fact that, during these four periods, the incitability of the nerve included between the galvanic poles is progressively dying out from the divided end towards the muscles. What is to be supposed with respect to the incitability of the nerve is this—that, in the first period, this condition is unimpaired everywhere; that, in the second period, it has disappeared to a point which is further down the nerve than the place to which the *outer* pole (as the pole which is furthest from the muscles may be called) is applied; that, in the third period, it has partially disappeared also as far down the nerve as the place to which the *inner* pole (as the pole which is nearest to the muscles may be called) is applied; and that, in the fourth period, it has altogether disappeared from all parts included within the galvanic circuit.

In the first period, then, the incitability of the nerve is unimpaired everywhere, and there is contraction at the beginning and ending of both currents, for the simple reason that the extra-currents cannot make their exit at either pole without acting upon the nervous incitability.

In the second period the departing incitability of the nerve has

departed to a point which is further down the nerve than that to which the *outer* pole is applied, and hence the nerve no longer responds to the extra-current which makes its exit from the nerve into this pole. *In the case of the direct current*, as the table shows, there is contraction when the circuit is closed, and none when the circuit is opened. There is contraction, that is to say, under the action of the initial extra-current, and not under the action of the terminal extra-current. And so it ought to be, according to the premises. Passing in the same direction as the galvanic current, *i. e.* centrifugally, the initial extra-current makes its exit from the nerve into the *inner* pole, and contraction results—because the nerve at this point has not lost the power of responding to the action of electricity. Passing in the opposite direction to that of the galvanic current, *i. e.* centripetally, the terminal extra-current makes its exit from the nerve into the *outer* pole, and hence there is no contraction—because the nerve at this point has lost the power of responding to the action of the electricity. *In the case of the inverse current*, on the other hand, as the table shows, contraction is at the beginning, and not at the ending, of the galvanic current; and why it should be so is not difficult to understand. In this case the initial extra-current will cause no contraction, because its direction is inverse, like that of the galvanic current, and because it must, for this reason, make its exit from the nerve where the nerve has already lost its incitability, that is, under the *outer* pole. In this case, the terminal extra-current will cause contraction; for being in the opposite direction to that of the galvanic current, it must make its exit from the nerve where the nerve still retains its incitability, that is, under the *inner* pole.

In the third period the change which has taken place is the disappearance of contraction upon the ending of the inverse current. In the last period the departing incitability of the nerve had departed under the *outer* pole; in this period this condition is upon the point of departing also under the *inner* pole. It must be understood, however, that the incitability of the nerve under the *inner* pole is departing only, not altogether gone, and that for this reason the nerve at this point may be able to respond to the action of the *stronger* initial extra-current, and yet be unable to respond to the action of the *weaker* terminal extra-current. Now, as was shown when speaking of the second period, the initial extra-current of the direct galvanic current and the terminal extra-current of the inverse galvanic current both make their exit from the nerve into the *inner* pole, and hence it is not difficult to see that contraction may still attend upon the beginning of the direct current, because the initial extra-current has sufficient strength to act upon the impaired incitability of the nerve, and that contraction may not attend upon the ending of the inverse current, because the terminal extra-current has not sufficient strength to act upon the impaired incitability of the nerve.

In the fourth period all contraction is at an end—at an end because now the incitability of the nerve has departed from all parts included within the circuit.

In this way, then, without taking into consideration the inverse or

The change which comes over the order of contraction when a musculo-motor nerve is acted upon for some time by an ordinary galvanic current varies in different cases, but the simplest and most typical case is that in which the nerve of a rheoscopic limb is subjected to this treatment. In this case, what happens may be conveniently divided into four periods, as in the following table:

	Direct Current.		Inverse Current.	
	Beginning.	Ending.	Beginning.	Ending.
First period	Contraction	Contraction	Contraction	Contraction
Second period	Contraction	—	—	Contraction
Third period	Contraction	—	—	—
Fourth period.....	—	—	—	—

In the first period, contraction occurs at the beginning and ending of the current, and it is of no moment, so far as this result is concerned, whether the course of the current along the nerve be inverse or direct. In the second period, contraction occurs only at the beginning of the direct and at the ending of the inverse current. In the third period, contraction is absent except at the beginning of the direct current. In the fourth period, contraction has ceased altogether to attend upon either current. It seems as if the direction of the current along the nerve was an essential element in the problem; but in reality this is of as little moment here as heretofore. The problem is somewhat complicated, but, as M. Chauveau shows, it is one which may be solved by remembering what has just been said about extra-currents, and by realising the fact that, during these four periods, the incitability of the nerve included between the galvanic poles is progressively dying out from the divided end towards the muscles. What is to be supposed with respect to the incitability of the nerve is this—that, in the first period, this condition is unimpaired everywhere; that, in the second period, it has disappeared to a point which is further down the nerve than the place to which the *outer* pole (as the pole which is furthest from the muscles may be called) is applied; that, in the third period, it has partially disappeared also as far down the nerve as the place to which the *inner* pole (as the pole which is nearest to the muscles may be called) is applied; and that, in the fourth period, it has altogether disappeared from all parts included within the galvanic circuit.

In the first period, then, the incitability of the nerve is unimpaired everywhere, and there is contraction at the beginning and ending of both currents, for the simple reason that the extra-currents cannot make their exit at either pole without acting upon the nervous incitability.

In the second period the departing incitability of the nerve has

departed to a point which is further down the nerve than that to which the *outer* pole is applied, and hence the nerve no longer responds to the extra-current which makes its exit from the nerve into this pole. *In the case of the direct current*, as the table shows, there is contraction when the circuit is closed, and none when the circuit is opened. There is contraction, that is to say, under the action of the initial extra-current, and not under the action of the terminal extra-current. And so it ought to be, according to the premises. Passing in the same direction as the galvanic current, *i. e.* centrifugally, the initial extra-current makes its exit from the nerve into the *inner* pole, and contraction results—because the nerve at this point has not lost the power of responding to the action of electricity. Passing in the opposite direction to that of the galvanic current, *i. e.* centripetally, the terminal extra-current makes its exit from the nerve into the *outer* pole, and hence there is no contraction—because the nerve at this point has lost the power of responding to the action of the electricity. *In the case of the inverse current*, on the other hand, as the table shows, contraction is at the beginning, and not at the ending, of the galvanic current; and why it should be so is not difficult to understand. In this case the initial extra-current will cause no contraction, because its direction is inverse, like that of the galvanic current, and because it must, for this reason, make its exit from the nerve where the nerve has already lost its incitability, that is, under the *outer* pole. In this case, the terminal extra-current will cause contraction; for being in the opposite direction to that of the galvanic current, it must make its exit from the nerve where the nerve still retains its incitability, that is, under the *inner* pole.

In the third period the change which has taken place is the disappearance of contraction upon the ending of the inverse current. In the last period the departing incitability of the nerve had departed under the *outer* pole; in this period this condition is upon the point of departing also under the *inner* pole. It must be understood, however, that the incitability of the nerve under the *inner* pole is departing only, not altogether gone, and that for this reason the nerve at this point may be able to respond to the action of the *stronger* initial extra-current, and yet be unable to respond to the action of the *weaker* terminal extra-current. Now, as was shown when speaking of the second period, the initial extra-current of the direct galvanic current and the terminal extra-current of the inverse galvanic current both make their exit from the nerve into the *inner* pole, and hence it is not difficult to see that contraction may still attend upon the beginning of the direct current, because the initial extra-current has sufficient strength to act upon the impaired incitability of the nerve, and that contraction may not attend upon the ending of the inverse current, because the terminal extra-current has not sufficient strength to act upon the impaired incitability of the nerve.

In the fourth period all contraction is at an end—at an end because now the incitability of the nerve has departed from all parts included within the circuit.

In this way, then, without taking into consideration the inverse or

direct course of the galvanic current along the nerve, the presence or absence of contraction at the opening or closing of the circuit may be accounted for, and the natural conclusion would seem to be that this contraction is brought about by the extra-currents in precisely the same way as that in which it is brought about by induced currents and by discharges of statical electricity.

Nor is there any evidence of a contradictory character in the background.

After what has been said it is easy to understand how it is that there may be contraction both at the beginning and ending of a strong current, when (in consequence of the incitability of the nerve having become impaired in the manner which has been described) a weak current may be attended by contraction at its ending only, or at its beginning only; for the nerve, which is not incitable enough to respond at both poles to the action of the weak extra-currents connected with the weak galvanic current, may still be sufficiently incitable to respond at both poles to the stronger extra-currents of tha stronger galvanic current.

It is easy, also, to account for the remarkable fact recently discovered by M. Claude Bernard,* that contraction occurs at the beginning of the direct and inverse currents, and at this time only, if the nerve retain the full measure of its incitability, and if the current used be of the very feeblest. It is easy to do this, for with a *very weak* current it may be supposed that the initial extra-current may still have strength to react upon the nerve when the terminal extra-current, which is always far weaker than the initial, is too weak to have this power.

The law, moreover, would seem to be the same in every particular in those complicated cases in which, as in the case where, one pole being applied to one foot and the other pole to the other foot of a frog prepared as Galvani prepared the parts, the current has to pass through a compound conductor of muscles and nerves. In this experiment it is necessary to realise the fact that the conducting powers of nerve and muscle are very different, and that in passing from nerve to muscle and from muscle to nerve, the current is in reality passing through different bodies, each of which has its own special points at which the current enters and emerges. The problem is more complicated, but M. Chauveau shows very clearly that it may be solved satisfactorily when a clear idea is obtained of the points at which the electricity enters and emerges in the several parts of the compound circuit, and of the condition of the nerves as to incitability at the points of emergence.

And so, also, in those cases in which, as M. Rousseau (de Verzy) has so well shown,† the contraction is due to the action of a *derived* current, for here, as heretofore, the facts show that the nerve is acted upon or not acted upon according as the derived current, or rather the extra-currents belonging to the derived current, make their exit from the nerve or points where the nerve retains

* 'Lecons sur la Physiolo vol. i, p. 163.

† Claude Bernard, ibid., to Système Nerveux, 8vo, Paris, 1858,

or does not retain its incitability. Here, as heretofore, the inverse or direct course of the derived current along the nerve is not found to play that essential part in the problem which it is supposed to play.

Nay, it would even seem that the action of the galvanic current upon sensation is equally irrespective of the centripetal or centrifugal course of this current along the nerve. Thus, in the case where the sciatic nerve of a rabbit is looped over the poles of a Daniell's cell, what happens is simply this—that motion and sensation are produced irrespectively of the direction of the current at the moment when the circuit is closed or at the moment when the circuit is opened, so long as the portion of nerve intervening between the poles retains the power of freely transmitting impressions; and that, afterwards, when the intervening portion of nerve is no longer equal to the free transmission of impressions, then pain, and pain only, is produced when the extra-current makes its exit from the nerve into the pole which is nearest to the sensorium, and motion, and motion only, when the extra-current makes its exit from the nerve into the pole which is nearest to the muscles.

It is also shown, very clearly, that the contraction which is brought about by the action of the electricity which is inherent in muscle and nerve is in every respect obedient to one and the same law.

It is, however, full time to pause, and we must therefore content ourselves by referring to the original papers for the facts and arguments which are not introduced into this free sketch of M. Chauveau's most admirable investigations.

Results of Researches on the Electric Function of the Torpedo. By Prof. MATTEUCCI, of Pisa, ('Proceedings of the Royal Society,' 22d Nov., 1860.)

"It has hitherto been believed," says Professor Matteucci, "that the action of the electric organs of the torpedo was momentary only; that it becomes charged under the influence of nervous action, and discharged immediately the action ceases, somewhat like soft iron under the influence of an electric current. Such, however, is not the real state of the case. The electric organ is always charged. It may be conclusively shown by experiment, that the action of that organ never ceases; and that round the body of the torpedo, and probably of every other electric fish, there is a continual circulation of electricity in the liquid medium in which the animal is immersed. In fact, when the electric organ, or even a fragment of it, is removed from the living fish and placed between the ends of the galvanometer, the needle remains deflected at a constant angle for twenty or thirty hours, or even longer." * * *

"The electric organ, or a portion of it, detached from the fish and kept at the temperature of freezing, preserves its electromotive properties for four, six, or even eight days; and an organ which has been kept for twenty-four hours in a vessel surrounded with a frigorific mixture of ice and salt, is found to possess an electro-

motive power as great as that of the organ recently detached from the living fish. Thus the electric organ retains its functional activity long after both muscular and nervous excitability have been extinguished.

"What, then, is the action of the nerves in this apparatus? Here, again, experiment affords a very distinct and conclusive answer. Detach the organ of a live torpedo and cut it into two equal portions, in such a way as to leave each half in connexion with one of the large nervous trunks, place the two halves on a plate of gutta percha, with electric couples opposed; that is, with the similar surfaces (say the dorsal) in contact, and connect the two free (ventral) surfaces with the extremities of the galvanometer. There will usually be no deflection of the needle, or at most a very slight effect, which will soon disappear. Now, after having opened the current of the galvanometer, irritate the nerve of one of the segments by pinching, by the interrupted electric current, or in any other way; or prick the piece itself with a needle. The portion of organ thus stimulated will give several discharges in succession, and a rheoscopic frog's limb, with its nerve applied to the part, will each time be thrown into violent convulsions. If, after this, the galvanometer be applied as before, there will be a strong deflection in a direction answering to the segment stimulated. This deviation endures for a short time, but gradually becomes less, so that in a few minutes the effect of the two segments is equal. Stimulation now of the other segment will, in like manner, render its electricity predominant. These alternations may be repeated several times, until naturally the effect becomes less and less marked.

"Thus the electromotive apparatus becomes charged, and acts independently of the influence of the nerves, but that influence renews and renders persistent the activity of the apparatus. We know, moreover, that the discharge, which is only a state of temporary increased activity of the organ, is brought on by an act of the will in the live animal, or by the excitation of the nerves of the organ." * * *

"The organ of the torpedo, therefore, does not, under the influence of the nerves, act as an induction apparatus. The operation seems more analogous to that of a 'secondary pile,' created through the influence of the nerves, in each constituent cell of the organ.

"The case is very different in muscular action, the changes occurring in which are better understood now that we know the phenomenon of muscular respiration. I do not here refer to the variation of the muscular current which takes place at the moment of contraction. In that case it would appear from experiment, as I lately showed, that there are indications of a current in an opposite direction, but the conditions of the animal structure in action are so complex, that no inference can be drawn as to the intimate nature of the phenomenon. It is otherwise, however, on comparing muscles which have been left at rest with muscles which have been fatigued by frequent contraction. Thus:—having selected a series of muscles, entire or d[illegible] which have been proved to be equal in electro-

motive power; subject a certain number of them to repeated stimulation, and then, by means of the method of opposed couples, compare the muscles which have been exercised with those which have been left at rest, and it will be found that the latter will manifest a much greater degree of electro-motive power than the former. The nervous excitation, which causes muscular contraction, developes heat, generates mechanical force, and consumes chemical affinity; and as the electro-motive apparatus of muscle operates through means of that affinity it must get weakened, like a pile in which the acid has become weaker. In the torpedo, on the other hand, there is neither heat nor mechanical force produced, and the electro-motive apparatus is set up again, as it were, through the influence of the nerves, after the manner of a secondary pile."

Influence of the Nerves on the Colour of Venous Blood.
By Dr. H. MEYER. ('Medico-Chirurgical Review,' July, 1861.)

In a communication to M. Du Bois-Raymond, M. H. Meyer mentions some experiments which show the influence of nervous action on the colour of the venous blood. After section of the ischiatic nerve, the blood from a cutaneous vein in the neighbourhood was at first still dark, but a few minutes later it issued with a bright red colour, and continued to do so even after seven days. An analogous result was obtained from six other similar experiments. He states that as early as 1820, Krimer stated as the results of his experiments "that the bright red blood of the arteries passes as such into the veins, without becoming, during its passage in the veins, dark red, as soon as it is, by means of section or destruction of the nerves, deprived of the influence of the latter." These observations gain at present in interest through Bernard's discovery regarding the varieties in the colour of venous blood of glandular organs, according to their condition of activity or rest.

On the Coagulation of the Blood.
By Mr. JOSEPH LISTER. ('Edin. Med. Journal,' December, 1859)

At a meeting of the Medico-Chirurgical Society of Edinburgh, Mr. Lister communicated his views as follows:

"I may remind the fellows of this Society that, in a paper which I had the honour to read before them the session before last, I brought forward facts which seemed to prove that the ammonia theory does not apply to blood within the vessels of a living animal. That theory asserts that the fluidity of the blood depends upon the presence of a certain amount of free ammonia holding the fibrin in solution, and that coagulation is a necessary result of the escape of the volatile alkali. But it was shown, in the paper referred to, that the blood, in man and other mammalia, though coagulating soon after death in the heart and great venous trunks, remains fluid for days in vessels of smaller size, and this under circum-

stances affording free opportunity for the escape of ammonia; and, on the other hand, that when a portion of a vessel, either in an amputated limb or in a living animal, is treated in a manner calculated to destroy its vital properties, the blood coagulates in the injured part, but retains its fluidity elsewhere, although there is no greater opportunity for the escape of ammonia in the one case than in the other.

"A striking instance of the difference between the natural receptacles of the blood and ordinary matter, in their relations to the vital fluid, happened to come under my notice this morning, in an arm which I amputated at the shoulder-joint last evening, on account of injury inflicted by machinery. On examining the limb, which had lain undisturbed since the operation, I saw that the axillary vein, which was patulous at the part where it had been divided by the knife, contained some blood at a distance of about half an inch from the open orifice; and having squeezed out a few drops, found that it was perfectly fluid, but yielded threads of fibrin when the point of a needle was drawn through it some minutes after emission. The blood had been for twelve hours freely exposed to the air, but being situated in an unwounded part of the blood-vessel, had remained free from coagulation.

"I demonstrated also another important principle, viz., that ordinary solid matter, unlike atmospheric air, induces coagulation of blood in its vicinity—when introduced within the living vessels. Having inserted a piece of clean silver wire for a considerable distance into one of the veins of an amputated sheep's foot, I slit up the vessel after a short time had elapsed, when I exhibited a coagulum extending along the whole length of the foreign body; whereas a mere wound of the vein failed to induce a clot, except immediately at the spot where the injury had been inflicted. It was obvious that the introduction of the wire could not affect the amount of ammonia in the blood, and from this and many other facts to which I need not here allude, I was led to the opinion that, as regards what takes place within the living body, the ammonia theory might practically be left entirely out of consideration.

"What I have to show now will, I think, prove that, even for blood outside of the body, the ammonia theory, whatever degree of truth it may contain, is very far indeed from representing the whole truth. One of the most remarkable circumstances connected with blood that has been removed from the body is, that it refuses to coagulate below a temperature of 40° F., or thereabout. This is explained by Dr. Richardson, on the hypothesis that the low temperature prevents the evolution of ammonia, while the rapidity with which coagulation takes place at high temperatures seems to him satisfactorily accounted for by the increased volatility exhibited by the ammonia under such circumstances. I was myself disposed at first to accept this interpretation, but subsequent reflection led me to think that, to say the least, it required confirmation. It occurred to me that if it were true that the fluidity of the blood below 40 F. was due to free ammonia retained in it, coagulation would take place immediately, in spite of the cold, if the alkali were neutralized by the addition of acid; provided the fibrin were not impaired in its coagulating property by the reagent employed. In order to ascertain whether this result would really follow, I poured blood freshly shed from a sheep into vessels surrounded by ice-cold water, and by this means suc-

ceeded in keeping some portions of it fluid for a considerable time, and found that it continued liquid notwithstanding the addition of diluted acetic acid in what I supposed must be sufficient quantity to overcome the feeble alkalinity of the blood, while the acidulated specimen retained the property of coagulating very rapidly when raised in temperature. But on attempting to discover whether this blood was really acid in reaction, I found that its red colour entirely vitiated the indications of both litmus and turmeric; and even the serum contained after contradiction of the clot was too much tinged to admit of the satisfactory application of the test paper. Being thus baffled in my experiments with the sheep, I had recourse to the horse, in which the red corpuscles subside with peculiar rapidity in the plasma, giving rise to the buffy coat well known to occur in the blood of that animal in the state of health, so that the opportunity would be presented of obtaining liquor sanguinis free from red corpuscles, to which the tests could be applied without risk of fallacy. Accordingly, yesterday afternoon, a horse being placed at my disposal by my friend, Mr. Gamgee, of the New Veterinary College, I tied into the right jugular vein one end of a piece of vulcanized india-rubber tube, four yards in length, the greater part of which was coiled up in a freezing mixture, and some of the blood having been allowed to remain for a while in the tube, was shed into vessels standing in ice-cold water. Its temperature on first escaping into the air was 39¾°F., and having been since kept in the cold, it is still only partially coagulated at the present time (twenty-nine hours after it was shed). At first, however, it appeared as if we were likely to fail, the blood of this horse being a rare exception to the general rule, in exhibiting for a long time no appearance of the "sizy" layer. But, after it had stood for about two hours, I succeeded in removing from the surface, by means of a glass tube, a sufficient amount of liquor sanguinis for the performance of an experiment, taking care that the glass into which it was shed and the tube were both near the freezing point. To half a drachm of this plasma I now added one minim and a half of moderately dilute acetic acid, which had the effect of rendering it distinctly acid, as indicated by its communicating a red tint to litmus and restoring the colour of turmeric paper which had been reddened by dipping it in the portion of the liquor sanguinis which had not been acidulated. I kept the specimen in ice-cold water till this evening. For a long time it remained perfectly fluid, except the formation of little, soft coagulum at the surface, just as in the unacidulated blood; but a few drops placed in a watch-glass and brought into a warmer atmosphere, coagulated in about the same time as the blood that first flowed from the tube, a soft clot forming in about a quarter of an hour. Even at the expiration of twenty-four hours, a portion of what remained in the cold was still fluid, though faintly acid, but set into a pretty firm clot on being removed into a warmer situation."

Mr. Lister performed a similar experiment before the Society. A glass containing some liquor sanguinis of the horse's blood, shed twenty-nine hours before, was taken out of the mixture of ice and water in which it stood, and the contents were seen to be still to a considerable extent fluid, although acidulated with acetic acid two hours previously. A portion of the liquid was poured into a

watch-glass, and, having been shown to be acid by litmus-paper, was set aside to coagulate, and about a quarter of an hour later was exhibited as a soft clot. Mr. Lister then continued—

"From these facts it is obvious that the ammonia theory utterly fails to explain the influence of temperature on coagulation. The circumstance that the liquor sanguinis was acid in this experiment, is clear proof that it contained no free ammonia whatever; yet the acidulated plasma was affected by cold and heat just like ordinary blood. It remained fluid near the freezing point, although the ammonia it originally contained must have entered into combination and lost its reputed power of dissolving the fibrin, and it coagulated when warmed, though the ammonia fixed by the acid, must have been incapable of evolution. If the author of the ammonia theory were asked to explain why this horse's blood took a quarter of an hour to coagulate, he would no doubt reply that it must have contained a large amount of ammonia, requiring all this time to escape. But we have seen that the acid liquor sanguinis, though possessing no free ammonia at all, took as long to clot. There can, therefore, I think, be little question, but that the slowness of coagulation in the horse, compared with the rapidity of the process in the sheep, and the variations met with in the period in the human species, depend not on the amount of ammonia present in the blood, but on differences in its other constituents, and, speaking generally, that the theory which attributes the coagulation of the blood to the escape of ammonia is fallacious."

The Action and Sounds of the Heart; a Physiological Essay. By Dr. G. B. Halford, Lecturer on Anatomy at the Grosvenor Place School of Medicine. (Pamphlet, London, Churchill, 1860, pp. 47.)

The first part of this essay is occupied with the consideration of the action of the heart; the second part deals with the oft-debated question of the sounds of this organ. The whole is well deserving of careful study, but particularly the explanation which Dr. Halford offers of the sounds of the heart.

Dr. Halford shows that both the sounds are destroyed and reproduced by the same means, and he argues from this fact that both the sounds depend upon the same cause. He argues, indeed, that this cause is simply the vibrations of the valves produced by the backward pressure of the blood; first, against the auriculo-ventricular (*first sound*); and secondly, against the ventriculo-arterial valves (*the second sound*). The experiment by which it is shown that both the sounds are destroyed and reproduced by the same means are upon large dogs, in which the heart was exposed, and the respiration kept up by artificial means.

"A stethoscope being applied to the organ, the sounds were distinctly heard. The superior and inferior venæ cavæ were now compressed with bull-d the pulmonary veins by the finger and thumb; the heart tion, a stethoscope was again applied, and neither

first nor second sound was heard. After a short space of time the veins were allowed to pour their contents into both sides of the heart, and both sounds were instantly reproduced. The veins being again compressed, all sound was extinguished, notwithstanding that the heart contracted vigorously. Blood was again let in, and both sounds were restored. I have thus frequently *interrogated* the same heart for upwards of an hour, and always with the like result."

In order to show that the difference between the first and second sound depends upon the difference in the size, shape, and structure of the valves separating the ventricles from the auricles on the one side, and from the pulmonary artery and aorta on the other, Dr. Halford appeals from man to the lower animals. He expects that the sounds will be similar where the valves are similar, and different where the valves are different, and so it is.

"In birds there is no perceptible difference between their first and second heart sounds. Two sounds are heard, but they are so similar as to appear like one continuously intermitting sound. And why is this? Because the area of vibration for the production of both first and second sound is about equal, *i. e.*, a bird, in comparison with a mammal, has only half an element for the production of the first sound, only one *tendinous* valve separating the auricles from the ventricles (that being between the left auricle and the left ventricle; whilst in the right ventricle the valve corresponding to the tricuspid of mammals is absent, its place being supplied by a triangular layer of *muscular fibres* connected to the margin of the auriculo-ventricular opening, but which, however accurately it may close the opening during the ventricular systole, must in the production of sound be taken at *nil*.

"But in birds, as in mammals, the orifices of the aorta and pulmonary artery are both furnished with three semi-lunar valves, consequently there is no difference between the second sound of the heart of an eagle and of a child, of a fowl and of a dog; but the heart of the eagle and of the fowl, wanting, as it does, the *tendinous* tricuspid of the right side, gives out only half the intensity of the first sound elicited from the heart of the child and of the dog. I repeat, therefore, that the sounds of the heart have their origin in valvular tension alone. Q. E. D.

"But to pass, if possible, to further proof.

"There is a family of birds, the *Brevipennes*, including the ostrich and the emeu, characterised by peculiarities of structure approximating its members in some degree to the mammalia. In this family the heart participates in this gradual approach to the mammalian type. Instead of there being only one muscular valve separating the right ventricle from the right auricle, there is added a second, partly tendinous and partly muscular,* both of which diverge from a carnea columna springing from the wall of the ventricle. With the exception of this approach to the mammal, the rest of the ventricle is bird-like. Moreover, around the auriculo-ventricular opening there is a more or less distinct zona tendinea. The left ventricle is five or six times thicker than the right;

* This valve is usually described as muscular; but, in fact, it consists of tendinous fibres prolonged downwards from the zona tendinea, coated with muscular fibre. Professor Quekett kindly placed a portion of the valve under the microscope, and confirmed my opinion.

projecting from its walls are three strong muscular masses, from the blunted extremities of which proceed *enormously strong* chordæ tendineæ, which are attached to the apices, under-surface, and circumference of an equally powerful tendinous valve, disposed somewhat like that called the mitral in the human. The aortic orifice is guarded by three strong semilunar valves, and the pulmonary artery by three others proportionally weak. The auricles approach also the mammalian type, the left having a well-developed appendix full of musculi pectenati.

"What, then, must be the character of the sounds of the heart of the ostrich?

"Look at its enormously strong left auriculo-ventricular valve, resisting the pressure of the equally enormously strong ventricle, which has to send its contents to the greatly elevated head and to the far distant toes. I take not into consideration the more or less sonorous semi-tendinous valve in the right ventricle, when I say that the first sound must differ greatly from the second, and from the same sound heard in dissimilar birds. If I tell the reader that the left ventricle of the emeu (the heart being of about the same size as the human) contains a valve and chordæ tendineæ of twice if not thrice the thickness of those in the human subject, he will be prepared to know that the first sound in the ostrich's heart differs little, if at all, from that of the human, neither does the second sound, but that it is, perhaps, less clear. Of course, I cannot describe sounds; but I have listened repeatedly, and for a long time together, to the heart of the ostrich, and find its sounds approximating to those of the mammal; they may be pretty well imitated by *loob-dub*. The heart beats between seventy and eighty times per minute."

Dr. Halford also finds that the sounds of the heart of the apteryx, which organ is nearly identical in structure with that of a child or of a dog, differs greatly from those of the eagle, and agree almost altogether with those of the mammal. "If any one," he says, "will listen to the heart of the apteryx, he will almost think it is the heart of his own little child, or of his favorite dog. Its pulse, I should think, is not above 100 when at rest; as with me, under a little excitement it varied from 100 to 120.

"Above all, let the reader listen first to the heart of the eagle, then to that of the apteryx, and he will find the differences I have attempted to describe, and at once reconcile them with the teachings I am inculcating, viz., of their valvular origin alone."

After what we have said, it will be evident to every physiologist that the view propounded in this essay is one which is based upon careful experiment and able reasoning.

On the Circulation of the Blood in the Limbs and Head of Man. By Dr. J. P. Sucquet. (8vo, Paris, Baillière et Fils, 1859, pp. 55.)

By injecting the arteries with solidifiable injections, and by subsequently dissecting and carefully tracing out the vessels under a lens, M. Sucquet claims to have discovered, in the upper and lower extremities, and the head, a peculiar, derivative, or diverticular cir-

culation. He maintains that in each of these parts there is, independent of the capillary system, a direct passage between certain arteries and veins. He injected the axillary artery and found that the veins of the fingers and hand were the first to swell with the injected liquid, then the subcutaneous trunks of the forearm, and finally those of the arm. The trunks of the cephalic and basilic veins received the injection freely from the veins of the hand and fingers. Those branches of these two veins, however, which originate in the skin of the forearm, and the muscular and other deep-seated veins, were empty and collapsed. It is generally supposed that in the arm the blood passes from the arteries into the veins everywhere in the same manner. This our author denies. He contends that there are two distinct circulations in the upper extremity. One of these is general, permanent, regular, and nutritive; the other is inconstant and irregular, and has nothing to do with nutrition. It is localized in certain vessels of the elbow, and, above all, in the arteries and veins of the hand, and acts as a diverticulum for the superabundant blood of the arterial system of the arm, counteracting the frequent and marked irregularities of the latter, and preserving the constancy and the equality of the interstitial circulation.

M. Sucquet has also studied the circulation in the lower extremities. He found that liquids thrown into the crural artery always returned by the crural and great saphena veins; more quickly and more abundantly by the former, however, than by the latter. His observations led him to conclude that the lower extremity, like the upper, possesses not only a general circulation which flows through capillary vessels, and is constant, equable, and nutritive, but another or supplementary circulation, which is irregular and derivative, is confined to certain vessels of the knee, and especially to particular arteries of the foot, anastomosing with the saphena and even with the deep-seated veins at the end of the limb.

Injections cast into the primitive carotid artery always return, according to our author, by the jugular veins of the neck, without having visibly distended the vessels of the head. The derivative circulation of this part of the body is seated in the face, being carried on by the facial, ophthalmic, and auricular vessels. The surplus blood of the arterial system is transferred to the venous chiefly by the facial vein.

The derivative circulation, whenever it occurs, is particularly under the influence of the heart. Whatever increases the strength and rapidity of the latter augments also the activity of the former. The ingestion of food, alcoholic drinks, joy, anger, violent exercise, heat, and certain febrile movements accelerate this circulation by hurrying the action of the heart. On the other hand, hunger, fright, the depressing passions, and cold, lessen this circulation by weakening the heart.

The Action of Nicotine on the Heart. By M. Rouget. ('Journal de la Physiologie,' July, 1860.)

Nicotine, M. Rouget observes, is regarded as possessing in the highest degree the property of rapidly destroying muscular irritability. The action of this poison on the heart presents a remarkable exception to this opinion.

In frogs killed by the application of a drop of solution of nicotine to the eye or under the skin, the beatings of the heart continue long after all trace of irritability has disappeared in the muscles of locomotion. When the action of the heart has become feeble and the intervals between the beats increased, the direct application of nicotine instantly revives the contractions; these are at first notably increased in intensity, and at last become permanent, leaving the ventricle in a state of tonic spasm, with its cavity completely effaced.

In birds and mammalia killed by the inhalation of chloroform, the ventricles remain fixed in the state of diastole; the right auricle alone manifests some feeble tremulous movements. If the ventricles be pricked or galvanised, no result is produced, or only some feeble and entirely local contractions take place. But, in this state, the contact of a drop of concentrated solution of nicotine produces general contraction, energetic response to the stimulus of pricking or the electric current, and finally permanent contraction.

The Anatomy of the Human Lung. Fothergillian Prize Essay. By Mr. A. T. Houghton Waters, Lecturer on Anatomy and Physiology, Liverpool. (12mo, London, Churchill, 1860.)

From the light which it throws upon the structures of the ultimate pulmonary tissue, this essay is a valuable contribution to our anatomical riches.

"The *air-sacs*," says Mr. Waters, "are those tubes in which the bronchial ramifications end. They are situated at the surface, and throughout all parts of the lung; they are supported externally by the pleura, and within the lung they in part rest by their extremities or their sides against the bronchial tubes and the branches of the blood-vessels, and through the transparent coats of the smaller bronchial tubes they are visible as through the pleura. The air-sacs consist of somewhat elongated cavities, which communicate with a bronchial ramification by a circular opening, which is usually smaller than the cavity to which it leads. They are arranged in groups, placed side by side and separated from one another by their membranous walls. Their shape, when distended, is polygonal, approaching nearly to the circular form; they increase somewhat in size as they pass from the bronchial tube to their fundus. The sacs connected with one bronchial termination do not communicate with those of another; each set of air-sacs is therefore a little lobule or *lobulette*, which, in fact, represents the entire arrangement of the lung, and is a lung in miniature.

"The walls of which the air-sacs are composed are exceedingly thin and much sacculated, *i. e.* they have in them a number of small, shallow, cuplike depressions, which are the parietal alveoli of some authors. The bottom of the air-sacs presents the same appearance as thin, lateral walls; in fact, the fundus is but the closed continuation of these walls, and the cuplike depressions or alveoli are here very numerous."

Mr. Waters, in opposition to the views of Todd and Bowman, and some others, considers that the air-sacs and the alveolated portion of the bronchial tubes are lined with a variety of the pavement epithelium. The most interesting part of the essay is that occupied with the expression of the author's views upon the distribution of the blood-vessels, which he has most carefully investigated. We quote his own *résumé:*

"The pulmonary artery distributes its blood to the respiratory portion of the lungs.

"The pulmonary veins return the blood which has been distributed by the pulmonary artery. The ultimate branches of the pulmonary artery in the air-sacs form the nutritious vessels of the respiratory portion of the lungs.

"The bronchial arteries distribute their blood to the bronchi, the bronchial tubes, the vessels and areolar tissue of the lungs; the branches that enter the lungs pour their contents into the pulmonary veins. The bronchial veins return the blood, which is distributed to the structures about the roots of the lungs."

Inquiries into the Phenomena of Respiration. By Dr. Edward Smith, Assistant-Physician to the Hospital for Consumption at Brompton. ('Dublin Hospital Gazette,' 1st July, 1859.)

The author gives, in this communication, the result of numerous inquiries into the quantity of carbonic acid expired, and of air inspired, with the rate of pulsation and respiration—1st, in the whole of the twenty-four hours, with and without exertion and food; 2d, the variations from day to day, and from season to season; and 3d, the influence of some kinds of exertion.

After a description of the apparatus employed by previous observers, he describes his own apparatus and method. This consists of a spirometer to measure the air inspired, capable of registering any number of cubic inches; and an analytical apparatus to abstract the carbonic acid and vapour from the expired air. The former is a small, dry gas-meter, of improved manufacture, and the latter consists of—1st, a desiccator of sulphuric acid to absorb the vapour; 2d, a gutta-percha box, with chambers and cells, containing caustic potash, and offering a superficies of 700 inches, over which the expired air is passed, and by which the carbonic acid is abstracted; and 3d, a second dessicator to retain the vapour which the expired air had carried off from the potash box. A small mask is worn, so as to prevent any air entering the lungs without first passing through the spirometer; and the increase in the weight of this with the connecting

tube and the first dessicator gives the amount of vapour exhaled; whilst the addition to the weight of the potash box and the second dessicator gives the weight of the carbonic acid expired. The balances employed weigh to the $\frac{1}{10}$ of a grain, with 7 lbs. in the pan. By this apparatus the whole of the carbonic acid was abstracted during the act of expiration, and the experiment could be repeated every few minutes, or continued for any number of hours, and be made whilst sleeping, and with certain kinds of exertion.

The amount of carbonic acid expired in the twenty-four hours was determined by several sets of experiments. Four of these, consisting of eight experiments, were made upon four gentlemen—on the author, Professor Frankland, F.R.S., Dr. Murie, and Mr. Moul, during the eighteen hours of the working day. In two of them the whole of the carbonic acid was collected, and in two others the experiment was made during ten minutes at the commencement of each hour, and of each hour after the meals. The quantity of carbonic acid varied from an average of 24·274 oz. in the author to 16·43 oz. in Professor Frankland. The quantity evolved in light sleep was 48·8 and 4·99 grains per minute, and when scarcely awake, 5·7, 5·94, and 6·1 grains at different times of the night. The author estimates the amount in profound sleep at 4·5 grains per minute, and the whole evolved in the six hours of the night at 1950 grs. Hence the total quantity of carbon evolved in the twenty-four hours, at rest, was, in the author, 7·144 oz. The effect of walking, at various speeds, is then given, with an estimate of the amount of exertion made by different classes of the community, and of the carbon which would be evolved with that exertion.

The author then states the quantity of air inspired in the working day, which varied from 583 cubic inches per minute in himself to 365 cubic inches per minute in Professor Frankland; the rate of respiration, which varies in different seasons as well as in different persons; the depth of inspiration, from 30 cubic inches to 39·5 cubic inches; and the rate of pulsation. The respirations were to the pulsations as 1 to 46·3 in the youngest, and as 1 to 5·72 in the oldest. One half the product of the respirations into the pulsations gave nearly the number of cubic inches of air inspired by some of the persons; and the proportion of the carbonic acid to the air inspired varied from as 1 grain to 54·7 cubic inches to as 1 grain to 58 cubic inches. The variations in the carbonic acid evolved in the working day gave an average maximum of 10·43, and minimum of 6·74 grains per minute. The quantity increased after a meal, and decreased from each meal, so that the minima were nearly the same, and the maxima were the greatest after breakfast and tea.

The effect of a fast of forty hours, with only a breakfast meal, was to reduce the amount of carbonic acid to 75 per cent. of that which was found with food; to render the quantity nearly uniform throughout the day, with a little increase at the hours when food had usually been taken, and to the secretions to become alkaline.*

The variation[illegible] day were shown to be connected with

* The quantity [illegible] 30 per cent., that of vapour in the expired air 50 per cent., the rate [illegible] ed 7 per cent., and of pulsation 6 per cent.

the relation of waste and supply on the previous day and night, so that with good health, good night's rest, and sufficient food, the amount of respiration was considerable on the following morning, whilst the reverse occurred with the contrary conditions. Hence the quantities were usually large on the Monday. Temperature was an ever-acting cause of variation, and caused a diminution in the carbonic acid as the temperature rose.

The effect of season was to cause a diminution of all the respiratory phenomena as the hot season advanced. The maximum state was in spring, and the minimum at the end of summer, with periods of decrease in June and of increase in October. The diminution in the author was 30 per cent. in the quantity of air, 32 per cent. in the rate of respiration, and 17 per cent. in the carbonic acid. The influence of temperature was considered in relation to season, and it was shown that whilst sudden changes of temperature cause immediate variation in the quantity of carbonic acid, a medium degree of temperature, as of 60°, is accompanied by all the variations in the quantity of carbonic acid, and that there is no relation between any given temperature and quantity of carbonic acid at different seasons. Whatever was the degree of temperature, the quantity of carbonic acid, and all other phenomena of respiration, fell from the beginning of June to the beginning of September. The author then described the influence of atmospheric pressure, and stated that neither temperature nor atmospheric pressure accounts for the seasonal changes.

The kinds of exertion which had been investigated were walking and the treadwheel. Walking at two miles per hour induced an exhalation of 18·1 gr. of carbonic acid per minute, and at three miles per hour of 25·83 grs.; whilst the effect of the treadwheel at Coldbath Fields Prison was to increase the quantity to 48 grs. per minute. All these quantities vary with the season, and hence the author recommends the adoption of relative quantities, the comparison being with the state of the system at rest and apart from the influence of food.

On the Saccharine Functions of the Liver. By Dr. HARLEY, Professor of Medical Jurisprudence in the University College, London. ('Proc. of Royal Society,' Feb. 2d, 1860.)

The author relates a number of experiments which he had performed, in concert with professor Sharpey, in the Physiological Laboratory at University College. The results of the experiments do not in any way countenance the notion that sugar is not produced in the healthy animal body; but, on the contrary, such conclusions as they afford are altogether in favour of the following generally received views upon the subject:

1. Sugar is a normal constituent of the blood of the general circulation.
2. The portal blood of an animal fed on *mixed* diet contains sugar.
3. The portal blood of a *fasting* animal, as well as that of an animal fed solely on *flesh*, is devoid of sugar.
4. The livers of healthy dogs contain sugar, whether the diet be *animal* or *vegetable*.

5. Under favorable circumstances, and with proper precautions, saccharine matter may be found in the liver of an animal (a dog) after three entire days of rigid fasting.

6. The sugar found in the bodies of animals fed on *mixed* food is partly derived directly from the food, partly formed in the liver.

7. The livers of animals restricted to flesh diet possess the power of forming glucogene, which glucogene is, at least in part, transformed into sugar in the liver.

8. As sugar is found in the liver at the moment of death (even when the plan of freezing it has been strictly attended to), its presence cannot properly be ascribed to a post-mortem change, but it is to be regarded as the result of a natural condition.

On the Formation of Sugar and Amyloid Substances in the Animal Economy. By Dr. ROBERT M'DONNELL. ('Dublin Hospital Gazette,' May 15th, 1860.)

In this paper, which was read before the Royal Irish Academy, Dr. M'Donnell uses the term *amyloid substance* as a substitute for *glucogenic substance*, and he defines amyloid substance to be a generic term applied to animal substances having special characters, apparently forming a link between the immediate (azotized) principles of animal structures and the (non-azotized) vegetable formations, in some varieties presenting the characteristics of starch or dextrine of vegetable origin, yet in others giving unquestionable indications of the presence of nitrogen. The species of amyloid substance spoken of in this memoir belongs to the former group, and, being free from the intimate admixture of azotized matters, is consequently distinct from the amyloid substance of Virchow, which, although in histological characters analogous to cellulose and starch, yet, as met with in the prostate gland, the spleen, choroid plexus, &c., has not yet been shown to be convertible into sugar capable of fermentation. The first may be indicated as *the amyloid substance of Bernard*, or (being evidently nearer to the vegetable kingdom) *of first species;* the latter as *amyloid substance of Virchow*, or *of the second species*. The amyloid substance of Bernard, or of the first species, is a ternary compound isomeric with dried grape sugar. It is neutral, whitish, inodorous, insipid matter, soluble in water, insoluble in alcohol and strong acetic acid. In the presence of saliva and other animal ferments it is converted into sugar, which ferments on the addition of yeast, and reduces the cupro-potassic solution; iodine in contact with it produces a peculiar brown colouration, more or less intense, disappearing on the application of heat, and reappearing when the fluid cools below 80°; like dextrine, it causes the plane of polarization to deviate to the right. It was first obtained by Bernard by treating the boilings of the liver with four or five times its volume of absolute alcohol, and subsequently freeing the precipitate thus formed from azotized matters by boiling it for some time in a concentrated solution of caustic potash. This method is objectionable. The acetic acid process, although not eco[illegible] is preferable, and, indeed, is invaluable as a

test for the presence of the substance in question in the various tissues of the organism. The organ or tissue to be examined is boiled in a small quantity of distilled water; the whole is then bruised in a mortar with animal charcoal, thrown on a filter, and some drops allowed to fall into glacial acetic acid. If amyloid substance of the first species is present, it forms a more or less abundant white, flaky precipitate. Gelatine and casein are not arrested upon the filter by the animal alcohol, but the first is soluble in acetic acid, and the latter, although at first precipitated, is at once redissolved by the glacial acid. These substances, therefore, do not interfere where acetic acid is used, but the contrary is the case with alcohol. If the tissue, while still raw, be pounded in a mortar with animal alcohol, the albuminoid materials are more completely retained by it upon the filter; but one never can feel satisfied that absolutely no gelatine passes through when fibrous and muscular structures are being examined. For this reason the acetic-acid process seems less subject to error than any of the modifications of the methods in which alcohol and potash are used, and, accordingly, in the following experiments the former has been the process adopted:

1. Has the liver the power of forming amyloid substance of the first species from azotized materials? This question may probably be answered in the affirmative. The connexion between this substance and sugar is so close that the question may be made more general. Are saccharine and amylaceous matters formed in the animal economy from azotized matters? Chemists have obtained of late years a great number of results which tend to show that ternary compounds may result from azotized elements. Lehman has obtained it from hæmatine. Dogs fed for many days on meat exclusively are found to have amyloid substance in the liver, and, on being killed, saccharine matter is found sufficiently abundant in the blood and tissue of that organ. Bitches fed exclusively on meat for days continue to form milk containing sugar. Dr. M'Donnell has lately verified the same fact in cats. It is argued, however, that, nevertheless, the amylaceous and saccharine matters enter from without, for that the herbivora find the amylaceous principle in vegetables, that it accumulates in their tissues, and through this channel enter the organisms of the canivora, that, in short, while the bitches and cats are secreting milk, they are obtaining starchy materials from whence to elaborate the sugar of it from the meat on which they live.

That this is not the case may be argued from the following experiments:

First experiment.—Six samples of mutton were obtained, as fresh as possible, and treated as follows:—two ounces of each chopped up and boiled in one ounce of distilled water for half an hour; the whole bruised in a mortar, and made into paste with animal charcoal; the paste, placed in a filter, was washed with boiling distilled water, merely enough to allow a small quantity to pass through, which was let drop into a test-tube containing glacial acetic acid. In no one of the six instances did any precipitate of amyloid substance result.

Second experiment.—Six samples of beef, obtained quite fresh,

were similarly treated. In no one instance did any precipitate or amyloid substance result.

Third experiment.—The flesh of two rabbits was thus treated:—the hind quarters chopped up, boiled for some hours in as much water as was sufficient to bathe the whole: the highly gelatinous broth strained off and evaporated to a small bulk, mixed with animal charcoal, placed in a filter, and washed with boiling distilled water, so that a few drops were yielded, which were allowed to drop into glacial acetic acid. A small amount of a white substance was precipitated, which did not give with iodine the characteristic reaction. The fluid obtained from the filter was, of course, highly gelatinous, and gave an abundant precipitate when dropped into absolute alcohol.

Fourth experiment.—Mutton, beef, veal, and rabbit flesh was treated thus:—of each two ounces were pounded to pulp in a mortar, thoroughly mixed with one ounce of distilled water; the expressed fluid boiled, filtered, and placed in tubes over mercury, with yeast; equal portions of the same meats, when reduced to pulp, were mixed with saliva, and for some time kept at a temperature between 100° and 120°; subsequently, one ounce of distilled water was added to each of the expressed fluids, boiled, filtered, and placed in tubes with yeast, as the rest. In all a little more carbonic acid gas was formed than in the tube (always used as a corrector), containing an equal quantity of yeast, placed in distilled water. The meat, mixed with saliva, did not give more than that to which no saliva had been added, as it should have done did the meat contain amyloid substance convertible into sugar by contact with saliva.

2. Is the liver endowed with the power of converting its amyloid substance into sugar during life and health? "This question," says Dr. M'Donnell," is answered differently by some of the most eminent living physiologists. In taking one side, therefore, I do so with the greatest diffidence, feeling strongly the great delicacy of the question. It seems to me that there is, on the whole, evidence that the amyloid substance met within the liver is, as it were, on its way upwards towards the more exalted or complex immediate animal principles, and that its conversion into sugar is not its normal destination; that the process of healthy assimilation tends, if the expression may be used, to promote it from the rank of ternary to that of quaternary compounds; and that its transition into sugar is, therefore, a deviation from this progressive course—a dissimilative instead of an assimilative process.

"No one now doubts that if an animal, which has been fed for some time exclusively on meat, is killed by pithing, that, although no sugar exists in the portal blood, it is found in the hepatic; but it is doubted by some whether this glucogenesis is a perfectly normal process going on during life; in making experiments on the tissue of the liver immediately after death, no matter what rapidity, precision, and care are exercised, it must be confessed that results are met with which seem contradictory. However, the object being to ascertain the condition of the hepatic blood during life, I have had recourse to catheterism of the right side of the heart—an operation which, in the hands of others, has given results corresponding with those to which I now allude.

"1. In twelve experiments made on dogs, for some weeks before fed exclusively on meat, traces of sugar were found in the blood of the right side of the heart in five; there was no sugar discoverable in the blood of the remaining seven.

"2. In four rabbits fed on boiled eggs, meat, and butter, for some days, no sugar was detected in the blood drawn from the right side of the heart.

"3. In three dogs fed on mixed diet, and three rabbits fed on carrots, potatoes, &c., sugar was found in the blood of the right side of the heart, and in equal quantity in the blood taken from the carotid.

"4. In three rabbits fed on vegetables, sugar was found in the blood of the right side of the heart, drawn during life; but double, and in one instance more than treble the amount, was found in the blood sucked from the same locality after the animals were killed (one by pithing, two by hydrocyanic acid).

"Hence one seems in some degree justified in concluding that in vegetable-eating animals the blood is normally saccharine, but that the liver does not appear during life to form and pour out into the blood of the hepatic vessels sugar specially derived from the transformation of the amyloid substance into that material.

"The fact that fibrine is deficient in the blood leaving the liver, does not militate against the view that the amyloid substance is a matter in progress of assimilation towards becoming an azotized material; it may lead to the supposition that the fibrine is destroyed in the liver by parting with some of its nitrogen to combine with the ternary compound."

5. Has the liver the special privilege of making, to the exclusion of other organs and tissues, the amyloid substance of the first species? In answer to this question Dr. M'Donnell says:

"It is now satisfactorily known that it has not; and the facts recently brought forward upon this point are, perhaps, the most conclusive evidence which can be offered that this amyloid substance is related to the tissues in which it is found rather as a reparative material, or protoplasma, than as one formed for special transformation into sugar. Amyloid substance of the second species has been found in various forms, widely diffused throughout the animal organism, either as normal or morbid deposits; in the form of tunicine, identical in composition with cellulose uncombined with azote; as chitine consisting of cellulose in union with a proteic compound, it has been caused to ferment by Berthelot; while, as met with in the prostate, spleen, choroid plexus, and in what is known as amyloid degeneration of many organs, it has as yet resisted all attempts to change it into fermentescible sugar. This, probably, is on account of its intimate admixture or chemical union with azote, and the analogy, therefore comes to be striking between this matter and the azotized fats of nervous centres (cerebrine). It is, however, the existence of the first species of amyloid substance in other organs and tissues than the liver to which the present question refers, and with regard to which the following facts are before us:

"1. Amyloid substance (*of the first species*) of Bernard, is abundant

in the liver: much more so in animals fed on saccharine and amylaceous food than in those fed on meat—diminishing rapidly in quantity in the livers of animals not fed at all for some days, except in the case of hybernating animals, when it is found in quantity many days after the animal is asleep.

"2. It is found in the placenta, most plentifully, about the third and fourth months of utero-gestation.

"3. It exists in the lung and muscles of the fœtus, as well as in the epithelial cells of the skin, respiratory and digestive organ.

"4. It is beautifully seen in the cells of the formative material of the soft horn of the foot of the fœtal calf.

"5. It is met with in the muscular flesh of healthy horses.

"6. In the cartilage of the embryo of the chick.

"7. In the muscles and lungs of hybernating animals.

"8. In muscles paralysed in consequence of section of their motor nerves.

"9. Although easily separable from the liver tissue by boiling water, it does not in its natural (raw) state produce with iodine its characteristic reaction.

"That the retrograde process, destructive assimilation, or disassimilation of the muscles, &c., is, under certain circumstances, accompanied by the production of sugar, lactic acid, and inosite, all non-nitrogenous, is corroborative of the same view."

Production of Sugar in relation to the absorption of Fat and the development of Animal Heat. By M. Colin. ('Gaz. des Hôpitaux,' 13th November, 1860.)

In a paper recently read before the French Academy (9th Nov., 1860), M. Colin maintains—1. That the absorption or combustion of fat, the production of sugar, and the maintenance of animal heat, at its normal standard, are processes intimately connected with each other, and mutually interdependent. 2. That abstinence cannot be borne long by lean animals, for a very rapid lowering of temperature takes place in them, coincident with an almost complete disappearance of sugar in the liver, the blood, the lymph, and other fluids, which normally contain it. 3. That in fat, or moderately fat, individuals, the tolerance of abstinence, other things being equal, is exactly proportioned to the quantity of fatty material stored in the tissues; so long as the animal has fat, life is maintained, the sugar is renewed in the liver and the nutritive fluids, and the system's temperature is not notably lowered. 4. During hybernation the production of sugar preserves an activity parallel with the resorption of fat. 5. That in animals deprived of nourishment, the liver experiences the most notable changes, extending towards complete atrophy, the cells losing their fat, which is replaced by sugar.

A new Theory as to the nature of Corpora Amylacea. By Professor Mayer, of Bonn. (Virchow's 'Archiv,' Bd. ix, Hft. 1 and 2; and 'British Med. Journal,' 6th April, 1861.)

Professor Mayer has remarked that these bodies bear a striking resemblance, in their appearance and reaction with iodine, to the small corpuscles which are found in the joints of tapeworms and the interior of the cystic entozoa. Moreover, he found in the brain of a sheep that had died from the staggers, an immense number of corpuscles, both in the neighbourhood of the cœnurus and also at a distance from it, which resembled in every respect the corpora amylacea found in the brain and spinal cord of man and other mammalia. He likewise discovered an innumerable quantity of similar bodies in the brain and spinal cord of a measly pig. Professor Mayer has not had an opportunity of examining the human brain in the bodies of persons who have suffered from tapeworm; but he is of opinion that the corpora amylacea are intimately connected with the presence of entozoa in the system; and that, in fact, these bodies are nothing more nor less than the corpuscles which are found in the joints of tapeworms, and in the interior of the echinococcus and cœnurus.

On the Physiology of Digestion. By Professor Busch, of Bonn. ('Archiv für Pathol. Heilkunde,' vol. i, 1860.)

Professor Busch has had the opportunity of making experiments on digestion upon a woman who had been tossed by a bull, and who presented, in consequence of the accident, a fistulous opening communicating with the small intestines. The fistula was so complete that the bowel was divided in two perfectly distinct halves. The upper portion consisted of the stomach, the duodenum, and of a probably minute piece of small intestine; the lower portion was composed of the remaining part of the small intestine, colon, and rectum. Through the upper half, the food introduced into the stomach, as well as the digestive fluids of the latter organ, the liver, and the pancreas, escaped, no part of them finding their way into the lower half. This state of things was therefore favorable to the study of the action of the stomach, of the biliary and pancreatic secretions, and also of intestinal secretions independently of the liquids just named.

One of the first effects of the pathological state of this woman was a considerable loss of flesh, as observed when she came into the hospital six weeks after the accident. Her appetite was, however, insatiable, though she was as weak as those animals in whom artificial fistulæ are made. She was also very drowsy and cold; but this low temperature was merely objective, for a thermometer introduced into the intestine marked a normal heat. All these symptoms disappeared when the patient recovered a little strength, in consequence of a generous diet.

She used to swallow an enormous quantity of food without feeling

satisfied; but by thus eating largely she felt better, though still hungry. When the stomach was empty she felt ill. The woman was so thin that the coils of intestines could be seen through the parietes of the abdomen; and it was observed that their peristaltic movements were as energetic as those of that portion of the intestine situated above the fistula and open to view.

As the intestinal secretion or juice was perfectly pure and unmixed with any chyme, which latter all escaped by the fistula, a good opportunity was offered for studying the nature of that juice. Professor Busch found the quantity always small, and tried its effects upon protein compounds, starch and cane-sugar, these being the first experiments of the kind ever made. The patient was at the same time fed by the introduction into the lower part of the intestine, through the fistula, of beef-tea, beer, soups with flour, meat, hard-boiled eggs, &c. Soon after these injections were resorted to she had numerous stools, a circumstance which had not been observed since the accident. The evacuations had a well-marked smell of putrefaction, without any undigested portions of meat or hard-boiled eggs being noticed in them; this being a clear proof that the intestinal juice acted as a solvent upon the food passing through the canal.

M. Busch used to wrap the various substances introduced in a piece of muslin, after having carefully weighed them, in order to observe the action of the intestinal juice. He noticed that it was principally upon starch that this juice exerted an energetic solvent power.

An interesting point was to find out what would become of fatty matter without the assistance of bile or pancreatic juice. According to expectation, fatty substances passed without being absorbed, or at least but a very small quantity of them disappeared.

M. Busch also examined the state of the substances which escaped by the upper portion,—namely, those which had been subjected to the action of saliva, the gastric juice, bile, and the pancreatic juice. A very extraordinary fact observed was, the rapidity with which the alimentary substances escaped. In from fifteen to thirty minutes after the ingestion of the food by the mouth, it was observed to escape by the fistula; hard-boiled eggs appeared in from twenty to twenty-six and thirty-five minutes; cabbage took from fifteen to nineteen minutes; meat from twenty-two to thirty minutes; and potatoes fifteen minutes. When the meal was plentiful, complete digestion required from three to four minutes. (?)

The substances which escaped by the upper end of the divided canal seemed at first sight to have undergone but little change; they were, however, considerably softened, and the meat presented both longitudinal and transverse cracks or slits. M. Busch thinks that the fluid in which these substances were suspended contained no longer any saliva.

We add a few of the propositions which the author considers as proved by the experiments above enumerated:

1. The peristaltic movements of the intestines are as vigorous when the bowels are covered by skin as when they are exposed to the air; they withstand the pressure of a column of water two feet high.

2. The intestinal tube has periods of rest and motion.

3. The intestinal juice is secreted in small quantity; its reaction is always alkaline; and it contains, on an average, 5·47 per cent. of solid matter.

4. It decomposes starch and protein compounds.

5. It changes starch into grape-sugar.

6. It decomposes protein compounds with the phenomena of putrefaction.

7. It does not change cane-sugar into grape-sugar.

8. Cane-sugar, when wholly absorbed, does not reappear in the urine.

9. Fat which has not been brought in contact with the bile or pancreatic juice is either not absorbed, or, if so, in very small quantities.

10. The first portions of the food introduced into the stomach reach the first third of the small intestine, on an average, in from fifteen to thirty minutes.

11. Cane-sugar held in solution disappears almost entirely at the beginning of the intestinal canal; any such cane-sugar which reaches the small intestine is changed into grape-sugar.

12. Unboiled white of egg is absorbed in the stomach or the first part of the intestine; the portion which goes beyond has not undergone any change.

13. Gum is not changed into sugar; it passes into the intestine without alteration.

14. Gelatine becomes dissolved, and loses the faculty of coagulation.

15. Traces of caseine in solution are found in the intestine after the ingestion of milk.

16. Fat forms an emulsion with the fluids which find their way into the small intestines, when these fluids have an alkaline reaction; the emulsion is incomplete when they are acid.

17. The mixture of juices in the small intestine has a digestive action on protein compounds.

18. The minimum of the digestive juices which reach the small intestine in twenty-four hours, weighs more than one seventeenth of the whole body.

On the Deglutition of Alimentary Fluids. By Dr. J. H. Corbett. ('Proceedings of the British Association for the Advancement of Science,' Session 1860; and 'British Medical Journal,' July 21, 1860.)

In this paper, the author endeavours to prove that there are two distinct forms of deglutition; that, while the alimentary bolus is propelled with rapidity over the epiglottis, fluids can flow in two streams, one at each side of the epiglottis and of the aryteno-epiglottis folds, without the danger incidental to its passage over the central aperture of the larynx. This occurs in the infant and mammal during suction; it takes place in the sipping of fluids, swallowing of the

saliva, and during drinking in a continuous draught. Ordinary drinking is accomplished by gentle muscular movements, which should not be confounded with the gulping of fluids. In gulping, the fluid is rapidly and forcibly propelled backwards, and this act somewhat resembles the deglutition of solids.

In experiments made by the author on the dead body, fluid poured upon the dorsum of the tongue passes backwards into the pharnyx in two streams, through the grooved passages situated at each side of the epiglottis and aryteno-epiglottic folds.

In the living body, during the deglutition of fluids, the uvula fall forwards upon the tongue, in front of the epiglottis; and both the uvula and epiglottis afford protection to the respiratory apparatus. The fluid is divided by the uvula into two currents, which descend at each side, under the half-arches of the palate; that such is the principal use of the uvula. The anatomical arrangements in the human body are perfectly adequate for the transmission of fluid in this safe manner. The anatomy of the porpoise, in which the larynx rises in the form of a blow-tube for several inches above the level of the tongue, affords a strong confirmation of this view; which is further sustained by instances in which the epiglottis has been destroyed. The distinctness of the two forms of deglutition is also indicated by the fact that the mouth may be filled with food, and yet drink can be swallowed without displacement of the solid aliment.

Two Cases in which Milk was secreted from the Axilla. By (1) Dr. HARE, Physician to University College Hospital, London; and (2) Dr. HARRIS, Professor of Physiology in the Savannah Medical College. (1. 'Lancet,' 27th October, 1860 2. 'American Journal of Dental Science,' vol. x, 1860; and 'Medical Times and Gazette,' 13th April, 1861.)

1. *Dr. Hare's case.*—Mrs. M. S—, æt. 37, was admitted an out-patient at University College Hospital, for slight dyspepsia at the end of April last. On a subsequent visit, on May 14th, she informed me that she had a small swelling under the right arm, which for some while past had given out a white milky-looking discharge, presenting exactly the same appearance as the milk from the breasts. She was a woman of middle or slightly below the middle stature, of good conformation, somewhat thin, hair dark; her general health had been good. She was confined of her seventh child on February 2d; had suckled all her children, and at no period of her former lactations, or at any other time, had she observed any swelling in either axilla. On this last occasion she had as good a supply of milk as usual, and had reared this child also at the breast. It was on the night of her confinement that she first observed a swelling in the right axilla, which she described as being (when she first noticed it) "nearly the size of half a walnut." It did not increase much in bulk, but became harder, and caused some pain as low down as the elbow. It was not until the end of a month that it discharged a little fluid, which was then, as it had continued to be up to the time of my seeing her, of a decidedly milky appearance. The discharge of the fluid gave relief to the pain. Though the swelling had continued, and had always been of the same character, it had varied somewhat in amount. If she did not exert herself or use the arm much,

less was discharged; but as she attended to her domestic duties, enough generally escaped to moisten the linen, and sometimes even more than this. By pressure she had always been able to force out more of the fluid.

On examining the axilla, I found an irregularly ovoid prominence situated rather nearer the posterior and outer than the anterior and inner part of that region; it was nearly an inch in length, and more than half an inch in breadth, and its longer axis was placed somewhat obliquely with regard to the axillary space. Though the prominence was distinctly visible, yet the mass felt thicker than it appeared to be, as a notable portion of it lay buried in the cellular tissue of the axilla. Its entire bulk was about that of a large filbert or a small half walnut; its outline was but moderately well defined, and not perfectly regular or circumscribed, for the little mass seemed somewhat blended with the loose cellular tissue of the axilla. Its substance was firmish, but by no means so hard and resisting as an enlarged gland usually is in that situation; indeed, by moderate pressure, its shape could be readily altered, though it instantly resumed its original form on the pressure being removed. The skin over the swelling presented no redness nor any different appearance from that of the rest of the axilla; there was no trace of a nipple, and indeed so extremely minute was the aperture through which the fluid escaped, that it was impossible to say at what point it made its appearance until the surface had been wiped quite dry, and a fresh portion was forced out by pressure. It was then found that there was but one orifice, which was situated near the outer and posterior end of the mass, and which seemed scarcely, if at all, larger than that of one of the sweat ducts; there was no papilla or elevation of any kind at the opening. On pressure, the milky-looking fluid readily trickled out, as much as the fifth or six (at least) of a drachm being collected in a test-tube in the course of a minute or two; but, even of this quantity, the first portion came away more readily than the last few drops. As already stated, the fluid had all the usual appearances of normal human breast-milk, being a thin, bluish-white liquid, rather sticky when rubbed between the fingers. The small quantity collected in the test-tube, being allowed to remain undisturbed, was found after a few hours to form on its surface a layer of cream. A drop of the fluid being, as soon as collected, placed under the microscope, it was seen to be rich in the well-known, variously-sized oil-globules of milk, without any other observable form; nothing resembling a pus-globule was detected.

Such were the points of the case observable at the time when I saw the patient, in May last; and as the case was a rare one, I exhibited the specimen of the milk I had collected to the Pathological Society. I have seen Mrs. S—, so lately as September 4th and 18th, when the condition of affairs was, apparently, almost exactly as in May. She was still suckling, and still had a discharge of milk from the axilla to about the same amount as before; the size, shape, appearance, and feel of the small axillary mass were as already described. On the former of these occasions, I obtained by pressure about a sixth of a drachm of fluid from the axilla, and also got a small quantity of the breast milk, so as to compare the two: they were each placed in a test-tube, and in appearance could scarcely be distinguished from each other. After standing some hours, cream formed on the surface of each, the milk from the axilla forming, if anything, in proportion to its quantity, rather the thicker layer of cream. The fluid below the cream was, in the specimen from the axilla, slightly more opaque than in the other, while the latter had more of a bluish tinge. Microscopical examination gave just the same results as before, except that a few epithelial scales were also seen. When I saw her on the 18th, she stated that about four days previously the swelling in the axilla had

been larger and more tense than usual, and had caused her, as it generally did when fuller than the average, some pain, extending from the axilla down the arm, quite as far as the elbow. On that occasion, the inconvenience was sufficient to make her diminish the size of the swelling by pressing out some of the fluid, which she did with relief. She also stated that on the same day she had an unusual flow of milk in the breasts.

From what has been stated, there cannot be a shadow of a doubt as to the secretion from the axilla being true milk, and of a quality identical with that formed in the breast.

2. *Dr. Harris's case.*—A negro woman, who had always enjoyed good health, and has had eight children: soon after commencing the suckling of her third child, noticed tumours about the size of pigeons' eggs in each axilla, and which did not diminish after weaning. When she began suckling the fourth child, they increased in size, and were accompanied by a sense of distension and hardness. After the birth of the fifth child the tumours were tapped and about a pint of a milk-like fluid was drawn off. After the birth of the sixth and seventh children, they again enlarged, but were not tapped, and subsided somewhat after weaning. During the nursing of the eighth child, the woman was seen by the author. The tumour in the right axilla was tapped, and about a pint of milk-like fluid was discharged, allowing a hard lobulated structure to be felt at the base of the tumour. The tumour, after the discharge of the fluid, much resembled a flaccid mamma which had ceased to secrete milk. On puncturing the tumour on the left side, about an ounce of fluid was discharged, but as fluctuation was still perceptible, the tumour on this side was concluded to be multilocular. When the woman was last heard of, three months after the puncture had been made, no re-accumulation of fluid had taken place, although she was still nursing the child. A chemical and microscopical examination of the fluid completely proved its milky character—its true composition being intermediate between that of normal milk and colostrum, excepting that it contained an excess of salts.

The artificial production of Bone and Osseous Grafts. By M. Ollier.
('Proceedings of the British Association for the Advancement of Science,' Session 1860; and 'British Medical Journal,' 14th July, 1860.)

The results of M. Ollier's experiments (all of which were illustrated by specimens at the meeting in which the paper was read) may be summed up in the following propositions:—

1. When the periosteum is detached from the bone, one end being left attached, bone is formed in the direction of the periosteum, determined by the size and position of the portion of membrane.

2. After union has commenced to take place between the periosteum and the soft parts, the pedicle may be divided, but bone will still continue to form.

3. If the periosteum be removed altogether and inserted among the soft parts, [illegible] make an attachment, and bone will be developed.

4. If the [illegible] the periosteum be scraped off in part, no bone will fo[illegible] that has undergone this process.

5. If the [illegible] the inner surface of the periosteum

be brought into contact with soft parts, bone will be developed from the periosteal cells.

6. If a bone be taken out of its periosteal sheath, new bone will be produced; but if a segment of such sheath be removed, no bone forms in that space.

7. If a bone be removed entire with its periosteum, and inserted in soft parts, adhesion will take place, and new bone will be deposited from the periosteum on the old bone.

8. If, in a piece of inserted bone, a part be deprived of periosteum, that part dies or is absorbed. This latter process may take place by the denuded portion beoming either encysted or subjected to suppuration. As a general rule, in animals that are healthy, and live in the country, the process of encysting is presented; while in feeble animals, and those living in towns, suppuration is the ordinary result.

On the Reparative Process in Human Tendons after subcutaneous division for the cure of deformities, &c. By Mr. WILLIAM ADAMS, Surgeon to the Royal Orthopædic Hospital. (8vo, London, Churchill, 1860, pp. 175, with seven lithographic plates, and a series of woodcuts.)

In this volume Mr. Adams gives a full account of a series of experiments which he performed on rabbits, in the year 1855, of fifteen post-mortem examinations of patients, in whom subcutaneous tenotomy had been performed at periods varying from four days to three years previously, and also of the several specimens preserved in spirit, and he concludes with a *résumé* of the English and foreign literature on the subject. The general results and conclusions arrived at appeared originally in the 'Transactions' of the Medical and Chirurgical and Pathological Societies, and were noticed at the time of their appearance; and this being the case, all that is necessary now is to recommend the work before us to the attention of our readers—a duty which we discharge most cordially.

A Case of Dentition in Old Age. By M. CARRE. ('Gaz. Méd. de Paris,' September, 1860.)

CASE.—Madame X—, æt. 85, of remarkably good health, in January, 1859, felt a pain in the upper jaw, which she attributed to scalding herself with hot soup. The burning pain continued, with a little swelling, for a week, when, to her surprise, a tooth appeared. This was the left upper canine; it grew rapidly, and at the time of the report was of normal form and dimension, and was firmly implanted in the alveolus. Two months afterwards, the same symptoms presented themselves, and were followed by the evolution of the second incisor on the left side in the upper jaw. This tooth is small and solid, and presents some asperities. Some months subsequently, the first bicuspid in the lower jaw on the right side appeared; and, in January last, the corresponding tooth on the upper jaw. Of these two, the former has scarcely grown beyond the gum, and is irregular on its surface; the latter is

almost of normal size. With the exception of these teeth, Madame X— is edentalous; and the gums present the appearance usual in this condition. She cannot remember any facts indicating irregularity in her early dentition. She began to lose her teeth, without pain, at the age of 50. Her hair is but partially gray; it is mostly blond, and long. Her sight and hearing are perfect: the nails have a remarkable tendency to rapid growth.

The reciter of this case refers to several other instances of dentition in old persons, related by Ysabeau, Fauchart, Bohmer, Hoffmann, and Bartholin; the age in one instance being said to be 120 years.

On the Physiology of Widowhood. By Mr. ALFRED ECCLES, of Tunbridge Wells. ('Med. Times and Gazette,' June 30th, 1860.)

"For some time past," says Mr. Eccles, in a letter to the editor of the 'Medical Times and Gazette,' "my attention has been attracted to a very curious form of hereditary transmission of physical peculiarities which I think worth while to lay before the profession, that more extensive and more accurate investigation than I can accord it may, if not exactly, at least proximately determine its value as an influence in the production of disease.

"Lord Morton bred a hybrid from a chestnut mare and male quagga—the hybrid was quagga-like, and even the foals subsequently produced from the mare by a black Arabian sire were 'much more plainly barred across the legs than is even the pure quagga.' Now here is an instance of the positive transmission by the female of one species of the physical peculiarities of the male of another species, with whom she had bred, to her offspring by a subsequent union with a pure male of her own species. This in itself is not a little remarkable and worthy of investigation by those who have opportunity amongst mule breeders and others; but, further, I have made many inquiries amongst those interested in the pure breeds of all kinds of cattle, sheep, dogs, poultry, pigeons, &c., and they universally declare that if a high-bred female once breeds with an inferior male, even of her own race, she will never produce pure offspring, though she always subsequently breed with males of the highest caste. Thus if a thorough-bred mare have a colt whose sire is a half-bred horse, though she subsequently breed with only thorough-bred horses, her foals will never prove thorough-bred. An instance was lately mentioned to me much in point—where a very pure bred setter bitch produced her first litter after a cur dog, and, though subsequently put to some of the best setter dogs in the kingdom, her puppies were never pure or worth keeping. We know that greyhound breeders cross with a bull-dog to give their greyhounds courage and tenacity of purpose, and that it does this for many generations; but that is effected by always breeding from the progeny with greyhounds, subsequently to the first bull-dog cross. It would be curious to inquire whether the greyhound bitch subsequently breeding with pure greyhound, her progeny would show a similar t[illegible] of the courage of the bull-dog, as we have seen

take place in the markings of the quagga, and the worthless peculiarities of the cur.

'Quo semel est imbuta recens servabit odorem
Testa diu.'—HORACE.

"Now we only too well know that many diseases are capable of hereditary transmission, some more, some less; and I cannot but think the facts I have alluded to lend some colour to the thought, that even as physical peculiarities, so may diseases be transmitted by the female, though herself, and the actual father of her second progeny, as well as all their ancestors, may be free from any taint. In other words, it would seem far from improbable that if a woman married, and had a child by a man who died the subject of any well-marked hereditary disease, and she subsequently married and had children by her second husband, her first husband's disease would have a tendency to show itself in her second family, even though neither she nor her second husband, or their ancestors, were subject to the malady. I presume that one point would be necessary to this, viz., that at the time of impregnation by the first husband, he was then either absolutely suffering from, or very strongly predisposed to, the disease transmitted. The investigation of this very curious and interesting question would incidentally throw much light on how far constitutional peculiarities and diseases, such as gout, tubercle, insanity, &c., may be communicated by seminal transmission to the female, and be of considerable importance in determining many medical and social questions, as the first husbands of widows, who re-marry and bear children, have frequently died of the severer forms of disease well known to be capable of hereditary transmission. I commend the whole subject to the careful consideration of those of your readers who have time and opportunity to make those accurate observations which alone can determine the true value of all such questions."

Researches upon the Erectile Organs of the Female. By M. ROUGET. ('Journal de la Physiologie,' vol. i, 1858.)

The act of ovulation, M. Rouget maintains, is the same in theory as the act of parturition, of vomiting, of micturition, &c., &c. In the case of parturition, when the ovum has attained the limit of its development, it acts upon the walls of the uterus like a veritable foreign body, and the irritation of the mucous membrane or the muscular envelope itself, transmitted to the ganglionic centres of the great sympathetic and the spinal marrow, is *reflected* back to the muscular system of the uterus and the muscles of the abdominal parietes, which concur in an energetic act for the expulsion of the child; and moreover, when the Graafian vesicle has arrived at a certain degree of development, the distension of the true fibres of the *stroma* is the initial point of a *reflex irritation* which propagates itself throughout the muscular system of the internal organs of generation, to the mesoarium and the mesometrium.

The ovario-tubal fibres contract, draw near, and forcibly apply the fimbriated extremity upon the vesicle which protrudes, the veins, compressed in the meshes of the muscular network, force the blood to flow back and distend the corpus spongiosum, the vessels of the uterine mucous membrane yield, the menstrual flow establishes itself, and all these phenomena last as long as the stimulus continues to act, as long as the parietes of the vesicle resist the double effort of its contents which are increasing in size, and of the enveloping fibres which react against the distension; whilst, at last, the expulsion of the ovule restores quiet throughout the whole muscular apparatus, the course of the blood once more becomes free in the sinuses, the distension of the erectile bodies diminishes by degrees, and the hæmorrhage from the mucous membrane of the uterus arrests itself. Ovi-position is completed by the migration of the ovum through the channel of the tube as far as the uterus, and from thence externally, if impregnation gives no signal for another series of phenomena.

We believe that the muscular and erectile system of the internal organs of generation, can be called into play, outside the menstrual period, by excitement which has its origin elsewhere than in the ovary.

Sexual excitement is often, doubtless, in the woman restricted to the erectile formations of the bulb and the clitoris; but it ought, when complete, when the venereal orgasm reaches its highest pitch of intensity, to over-ride these limits, and invade the essential organs of the generative function, in which the *special* voluptuous sensation is developed which announces the accomplishment of the sexual act. *Kobelt*, who places the seat of all the generative, voluptuous sensations in the papillæ of the gland, was wrong in confounding with those sensations, more or less repeated and prolonged, which develop themselves in the mucous membrane of the organ in a passive state, this unique and instantaneous sensation, which in the man accompanies ejaculation, and in the woman manifests itself as the signal for the venereal orgasm.

Most profound, and all pervading, it predominates over everything, embracing the whole organism, and presents a striking analogy in its characteristics, if not in its essence, to the gloomy sensations developed in the mental organization by the great sympathetic.

It appears, as far as we can judge by observation, very delicate in such a matter, that it is in the perinæal region, among the pelvic organs even, that the shock of the voluptuous paroxysm is felt, that its centre is among the vesiculæ seminales, and at the veru-montanum and doubtless, in the woman, at the uterus, and that it announces the participation of these organs in the act which the organs of copulation have only prepared for.

If this be so, if the venereal orgasm in the woman has its seat in the internal organs of generation, we understand the rôle which those rich erectile formations ought to play, which so much surpass in their development those of the organs of copulation.

The antagonism evident from the development of the external and internal organs of generation in the two sexes, an antagonism which in the woman is everywhere progressive from the first, joined to the

identity of the structure of the corpus cavernosum in both classes of organs, furnishes still another probability greatly in support of the idea that, under the same influences, similar phenomena would there develop themselves.

Erection of the vascular formations of the uterus and the ovary as a consequence of a sexual excitement will explain how. The erection lasting too short a time in this case to exhaust the resistance of the capillaries, and cause a hæmorrhage, is capable, if repeated, of accelerating the return of menstruation, and increasing the duration and quantity of the discharge, as Haller, Burdach, and Parent-Duchatelet, have observed in lascivious women and prostitutes, in whom the menstrual flux, sometimes immoderate, could reproduce itself every fifteen days.

Facts observed by M. Coste, relating to the more frequent return of heat in animals in consequence of the cohabitation of the males with the females, and the possibility of impregnation in the human species outside the normal periods of ovulation, also find their explanation in the erection of the bulb of the ovary under the influence of sexual excitement, an erection accompanied by a mechanical congestion of the parenchyma, which would have the effect of determining the maturation of the ovum before the natural term.

The conclusions drawn from the investigations in this essay are—

1st. That in the human female, the body of the uterus presents the structure of an erectile organ, a true corpus spongiosum.

2d. That to the ovary also is annexed an erectile bulb.

3d. That in all classes of vertebrated animals, and particularly in all the mammalia, a special muscular apparatus embraces the oviduct and the ovary, and determines their adaptation.

4th. That the fibres of the ovario-tubal muscular membranes (*mesovarium* and *mesometrium*) have such relations with the corpus spongiosum, and especially with their efferent sinuses, that, at the moment of contraction, the meshes of the network, in the midst of which the venous channels run, tightening themselves on all sides, the latter would necessarily find themselves compressed, and the flow of blood be more or less obstructed.

5th. That this contraction of the ovario-tubal muscular apparatus lasts through the whole period of ovulation, and the obstacle to the flow of blood, and the erection of the corpus spongiosum of the uterus and the ovary, which is the result of it, have the same duration.

6th. That menstruation, also, on the other hand, coinciding with ovulation, it is natural to consider that as the immediate consequence of the uterine erection; a true menstrual hæmorrhage, moreover, not showing itself unless in the place where this organ presents a structure really erectile.

7th. That if sexual excitement can, as appears probable, determine the erection of the uterus and the ovary, it is easy to account for its influence in shortening the periods of menstruation and ovulation.

INDEX TO VOL. XXXIII.

PAGE

Abortion in which the membranes and placenta are retained, on the treatment of cases of 216
Abortions and uterine polypi, contributions towards the history of . 246
Actæa, in the treatment of puerperal hypochondriasis and depression . 237
Acupressure, a case of amputation beneath the trochanters in which the arteries were secured by 132
Adams, on the reparative process in tendons after subcutaneous division 345
Adler, a case in which a foreign body was extracted from the bronchus by a bent wire, after tracheotomy 168
Agnew, a new operation for the radical cure of hernia . . . 182
Albuminoid disease, on 256
Alcohol and tea contrasted, the action of 268
Allier, on ergot of rye in retention of urine from paralysis or inertia of the bladder 120
Althaus, can lightning cure disease? 291
Amputation, for diseased joints in phthisis, on the question of . 70
on plaster of Paris bandages for dressing stumps after . 149
Amussat, on the diagnostic value of iodine injections in fistula in ano, and on incisions from within outwards 189
Amylacea, a new theory of the nature of corpora 339
Amyloid substance and sugar in the animal economy, on the formation of 334
Anderson, on opium as a remedy in poisoning by datura . . 276
Aneurism of the aorta, an interesting case of 83
Aneurismal varix, a proposition for the treatment of . . 136
Aorta, an interesting case of aneurism of the 83
Aphonia by anæsthetics, on the relief of certain forms of . . 166
Apiol in dysmenorrhœa, on the use of 233
Apoplectiform congestion in relation to epilepsy, on . . . 40
Aran, a remark on pleurisy and thoracentesis 65
Arsenic-eating, on 14
Artery, a new mode of tying the femoral 261
Asthma, on the pathology of 65

Baillot, on the use of apiol in dysmenorrhœa 233
Ballard, on a previously unobserved preventible cause of idiocy, imbecility, and allied affections 258

PAGE
BARKER, case of annular laceration of the cervix uteri . . 235
case of urticaria produced by some of the cetaceous larvæ . 119
BARNES, on the indications and operations for the induction of premature labour, and the acceleration of labour . . . 218
Bath, on the Eastern or Turkish 267
BAXTER, on organic polarity 298
BEALE, on the distribution of nerves in striped muscular fibre . 303
Belladonna and opium, on the antagonistic action of . . 279
BENNETT, some trials of the hypophosphites in phthisis. . . 76
BERNUTZ, a clinical treatise on diseases of women . . 232
BIDWELL, a new test for diabetes . . . 105
BIERBAUM, case of universal emphysema in pertussis . . 69
Birth of child between os vaginæ and anus, a case of ruptured perinæum and 232
Bladder, on the use of ergot of rye in retention of urine from paralysis or inertia of the 110
BLAND, on the bites of the venomous serpents of Australia . 127
Blindness, on colour- 304
Blood, on the coagulation of the 323
on the influence of the nerves on the venous colour of the . 323
in the limbs and head of man, on the circulation of the . 328
"Bloody sweat," case of 121
Bone and osseous grafts, on the artificial production of . . 344
Bones and stumps, on growth of long 142
BOUCHUT, a pathognomonic sign of scarlatina . . . 18
BRAINARD, case of spina bifida successfully treated by iodine injections 191
Breast, an evil arising from the administration of spoon-meat to children at the 255
BROWN-SÉQUARD, on the effects of an elevated temperature in the treatment of poisoning 295
BROWN, on the curability of intra-capsular fracture of the neck of the femur 200
case of ruptured perinæum and birth of child between os vaginæ and anus 232
cases of ruptured perinæum, with subsequent delivery without rupture 236
on fibrous tumours of the uterus treated by surgical means . 244
BRYANT, contributions on the subject of compound fracture, being an analysis of 302 cases 133
some suggestions for improving the operation for strangulated hernia 180
Buboes and enlarged glands by pressure, on the treatment of . 187
BURROWS, a case of acute myelitis and paraplegia . . 35
BURTON, total suppression of urine for seven days without head symptoms 108
BUSCH, on the physiology of digestion 339

CARRE, case of dentition in old age 345
Cancer, a remark on epithelial 124
CARRIÈRE, on the whey- and grape-cures in Germany and Switzerland . 272
Cataract, case of spontaneous cure of 155
on the after-treatment in operations for . . . 155
on the artificial production of . . . 305
CAZIN, on the antagonistic action of opium and belladonna . . 279

PAGE
Cerebral affections, on changes in the retina and optic nerve in some cerebral affections 54
Cerebritis and fever, a means of distinguishing between . . 32
CHALK, a new apparatus for eye-drops 158
CHAMBERS, a case of "bloody sweat" 121
CHANDRA, hysterical contractions of the joints cured by cold water douche 55
CHAPPLE, on the treatment of intermittents by large doses of arsenic . 21
CHASSAIGNAC, on "drainage par adossement" 139
CHAUVEAU, on the physiological action of interrupted and continuous electrical currents 312
CHISHOLM, on the after-treatment in operations for cataract . 155
a new operation for the radical cure of hernia . . 178
a simple mode of insuring the healing of anal fistulæ after incision, without plugging 190
CHRISTIAN, on the restoration of persons apparently drowned . 293
CIVIALE, his experience in lithotrity in 1860 170
CLAY, a new sign of post-partum detachment of the placenta . 227
Coca, the dietetic and medicinal properties of 269
"Cochin leg," on 206
Cod-liver and other oils, a method of imparting an agreeable flavour to 292
COLIN, on the production of sugar in relation to the absorption of fat and the development of animal heat 338
COMÉGYS, on the antagonistic action of opium and belladonna . 279
Complexion, clinical researches into morbid pigmentary changes of the 116
Consanguineous marriages, on 12
Contagion, its influence on the rise and progress of endemic diseases . 1
COOPER, new method of treating long-standing dislocations of the scapulo-clavicular articulation 195
COOTE, on the pathology of milky serum 87
CORBETT, on the deglutition of alimentary fluids 341
CORNISH, on the treatment of acute tropical dysentery by ipecacuanha 91
CORRY, a case of traumatic tetanus treated by conium . . 46
Costal cartilages, on the connexion of pulmonary diseases with primary anomalies of the 77
COTTON, on the action of hydrochloric acid in phthisis . . 74
on the action of liquor potassæ in phthisis . . 74
CROOKE, on obstruction and impaction of the rectum as the first symptom of famine 88
Croup, case of tracheotomy and artificial respiration in . . 66

DALTON, treatise on human physiology 297
DARRACH, on the treatment of tape-worm by aromatic sulphuric acid . 102
Datura, opium as a remedy in poisoning by 276
DAY, on elephantiasis arabum 207
Deafness, a new instrument for the relief of . . . 161
Deglutition of alimentary fluids, on the . . . 341
DEHAUT, on a possible cause of epilepsy . . . 52
Delirium tremens, on 33
Delivery and pregnancy upon insanity, on the influence of . . 44
DELMAS, on the prophylactic treatment of some morbid symptoms coincident with lactation 233
DEMAUX, on a possible cause of epilepsy 52

PAGE
Dentition, errors respecting 253
in old age, case of 345
Diabetes, on 102
a new test for 105
Diabetic urine by the loss of density after fermentation, on the estimation of sugar in 104
Digestion, on the physiology of 339
Diphtheria, on expectation in 90
Dislocations of the scapulo-clavicular articulation, new method of treating long-standing 195
of the shoulder, on the diagnosis of . . . 197
Dislocation of the head of the femur into the obturator foramen, with preservation of the movements of the bone . . . 198
Diuretics, clinical researches on the action of . . . 111
"Drainage par adossement," on 139
Drowned, on the restoration of persons apparently . . . 293
Dubois, an evil arising from the administration of spoon-meat to children at the breast 255
Dubois-Reymond, on hemicrania, or migrän . . . 44
Dumontpellier, on emboli in the pulmonary artery . . 76
Durham, on the physiology of sleep 302
Dysentery by ipecacuanha, on the treatment of acute tropical . 91
Dysmenorrhœa, on the use of apiol in . . . 233

Ear, seventh series of pathological researches into diseases of the . 159
on the means of preventing caries of the bone and cerebral abscess in diseases of the 160
Eade, an interesting case of aneurism of the aorta . . 83
Eccles, on the physiology of widowhood . . . 346
Electric function of the torpedo, researches on the . . 321
Electrical currents, on the physiological action of continuous and interrupted 312
Elephantiasis arabum, or "Cochin leg," on . . . 206
Emboli in the pulmonary artery 76
Emphysema in pertussis, case of universal . . . 69
Endocardial murmurs, the influence of change of posture on . 81
Endemic diseases, influence of contagion on the rise and progress of . 1
Entero-epiplocele, remarks on 183
Epilepsy, on apoplectiform congestion in relation to . . 40
by curara, on the treatment of . . . 51
a possible cause of 52
an analysis of 52 cases of 53
Epidemic diseases, on quarantine and the spread of . . 4
Epiphora, an unnoticed cause of 154
Erectile organs of the female, on the 347
Eye, on the effects of evacuating the aqueous humour in inflammation of the 145
Eye-drops, a new apparatus for 158

Famine, on obstruction and impaction of the rectum as the first symptom of 88
Feet," on "burning of the 210
treatment of excessive perspiration of the . . . 212

PAGE

Femur into the obturator foramen, with preservation of the movements of the bone, dislocation of the head of the . . 198
on the curability of intra-capsular fracture of the neck of the . 200
Fever and cerebritis, a means of distinguishing between . . 32
Fevers in Ceylon, on the treatment of malarious . . 23
by large doses of arsenic, on the treatment of intermittent . 21
Fistula in ano, on the operation for 189
how to secure the proper healing of the incision without plugging 190
Flint, a clinical report of 133 cases of pneumonia . . 58
on the treatment of pneumonia . . . 63
clinical researches on the action of diuretics . 111
Flower, diagrams of the nerves of the human body . . 302
Foucher, on the treatment of prolapsed rectum by hypodermic injections of strychnia 190
Frazer, two cases of temporary recovery after gastric perforation from ulcer 95
Fracture, being an analysis of 302 cases, contributions on the subject of compound 133
Frostbites, on the treatment of 130
Freund, on the connection of certain pulmonary diseases with primary anomalies in the costal cartilages . . . 77
Fungi, instructions of the French Board of Health respecting edible and poisonous 15

Gaffard, on the treatment of excessive perspiration of the feet . 212
Gairdner, on delirium tremens 33
Gardner, on the hygiène of the sewing machine . . 7
Glaucoma, a new operation for 143
Gleet by compression, on the treatment of . . . 187
Goupil, a clinical treatise on diseases of women . . 232
Gout and its treatment 24
Grape-cure and whey-cure in Germany and Switzerland, on the . 272
Greenway, a new operation for iridectomy . . . 150
Greisinger, on diabetes 102
Gudden, on hæmatic swellings of the ears of the insane . . 43
Guillot, on enlargement of the thyroid gland during pregnancy . 214

Habershon, on some cases of hydatid disease . . . 27
on the injurious effects of mercury in the treatment of disease 275
Hachenburg, on the treatment of gleet by compression . . 187
Hæmorrhage, on the arrest of venous 136
at the latter end of pregnancy and during labour, on concealed accidental 220
Halford, on the action and sounds of the heart . . 336
Hammond, on uræmic intoxication 107
Handisyde, a case of amputation beneath the trochanters in which the arteries were secured by acupressure . . . 132
Hare, case in which milk was secreted from the axilla . . 342
Harley, on the saccharine function of the liver . . . 338
Harris, case in which milk was secreted from the axilla . . 342
Head, an interesting case of gunshot wound of the . . 162
a curious case of wound of the . . . 164

PAGE
Heart, on the cause of the closure of the valves of the . . 79
on the action and sounds of the . . . 326
on the action of nicotine upon the . . . 330
Hebra, on the treatment of scabies 119
Hemicrania, on 44
Hernia, on the radical cure of reducible . . 175, 177, 178, 182
some suggestions for improving the operation for strangulated 180
treated by inverting the patient, a case of strangulated . 180
Herschell, on colour-blindness 304
Hervieux, on the treatment of suppurating wounds by sponges steeped in a chlorinated solution 125
Hewitt, practical observations "on supporting the perinæum" . 219
Hicks, on concealed accidental hæmorrhage at the latter end of pregnancy and during labour 229
Hildige, case of encysted abscess of the vitreous humour . 152
Hilton, a curious case of wound of the head . . . 164
Hutchinson, is ringworm contagious? . . . 118
a remark on epithelial cancer . . . 124
cases of orchitis treated by incision into the tunica albuginea testis 186
on iritis as it occurs in syphilitic infants . . 260
Humphry, on the growth of long bones and of stumps . . 142
Hydrogen, on the physiological and therapeutical properties of peroxide of 280
Hydatid disease, some cases of 27
Hypochondriasis and depression, on the use of actæa in . . 237
Hypophosphites in phthisis, some trials of the . . . 76
Hysterical contractions of the joints cured by cold-water douche . 55

Idiotcy, imbecility, and allied affections, on a previously unobserved preventible cause of 258
Insane, on hæmatic swellings of the ears of the . . . 43
Insanity, the influence of pregnancy and delivery upon . . 44
Iodism, on 283
Iridectomy, a new operation for 150
Iritis as it occurs in syphilitic infants . . . 260

Jacobi, errors respecting dentition 253
Jeannel, a method of imparting an agreeable flavour to cod-liver and other oils 292
Jenner, on albuminoid disease 256
Jobert, an interesting case of gunshot wound of the head . 162
remarks on entero-epiplocele . . . 183
Joints cured by cold-water douche, on hysterical contractions of the . 55
Jordan, a proposition for the treatment of aneurismal varix . 136
Jones, a record of 32 cases of pneumonia . . . 57

Kidd, on the pathology of asthma 68

Labour, on the indications and operations for the induction of premature labour, and the acceleration of . . . 218
not generally recognised and easily removable, a cause of protracted 224
Lactation, on the prophylactic treatment of some morbid symptoms coincident with 233

PAGE

LAFFORE, a cause of protracted labour not generally recognised and easily removable 224
LANGENBECK, on the arrest of venous hæmorrhage . . 136
LAYCOCK, clinical researches into morbid pigmentary changes of the complexion 116
LEE, further observations on the structure and treatment of uterine polypi 243
LEGOUEST, case of rupture of rectus abdominis muscle . . 194
LENTE, on the relief of certain forms of aphonia by anæsthetics . 166
Life, on certain phenomena of 298
Lightning cure disease? can 291
LIMOUSIN, on expectation in diphtheria . . . 98
LISTER, on the coagulation of the blood . . . 323
Lithotomy, a modification of the operation for . . . 172
Lithotrity, M. Civiale's experience in 1860 . . . 170
Liver, on the saccharine function of the . . . 333
LUMPE, a rare termination of uterine fibroid . . . 248
Lung, on the anatomy of the human 330

MACPHERSON, on the treatment of buboes and enlarged glands by pressure 187
MADDIN, on opium as a remedy in poisoning by datura . . 276
MAISONNEUVE, on the diagnosis of dislocations of the shoulder . 197
M'DONNELL, on the formation of sugar and amyloid substance in the animal economy 334
Manna of the Hebrews 285
MANTEGAZZA, the dietetic and medicinal properties of coca . . 269
MARCÉ, on the influence of pregnancy and parturition upon insanity . 44
MARKHAM, remarks on the cause of the closure of the cardiac valves . 79
Marriages, on consanguineous 12
MATTEUCCI, researches on the electrical function of the torpedo . 321
MAUNDER, a word on tracheotomy 167
MEYER, on the influence of the nerves on the venous colour of the blood 323
a new theory of the nature of corpora amylacea . . 339
Medicines with which merchant vessels are to be furnished, &c., the scale of 267
Mercury in the treatment of disease, on the injurious effects of . 275
Migrän, on 44
Milk was secreted from the axilla, cases in which . . . 342
MILROY, influence of contagion on the rise and progress of endemic diseases 1
on quarantine and the spread of epidemic diseases . 4
MITCHELL, on the treatment of rattlesnake-bite . . . 126
on the artificial production of cataract . . 305
MORTON, a new radical cure for hernia 177
Moss, on the action of potass, soda, lithia, lead, opium, and colchicum upon the urine 113
Muscle, case of rupture of rectus abdominis . . . 194
Muscular fibre, on the distribution of nerves in striped . . 303
contraction and sensation, on the immediate cause of . 308
Myelitis and paraplegia, a case of acute . . . 35

NELSON, on the treatment of frost-bites . . . 130
Nerves of the human body, diagrams of the . . . 302

PAGE
Nerves in striped muscular fibre, on the distribution of . . 303
on the venous colour of the blood, on the influence of the . 323
NEUDÆRFER, transfusion of blood in cases of exhaustion from suppurating wounds 133
Neuralgia, on the treatment of the paroxysm of 37
Nicotine upon the heart, on the action of . . . 330
NUNNELEY, a new method of operating for glaucoma . . 143
extraction of a piece of coal which had been in an eye ten years, with perfect recovery of sight . . . 156

OLLIER, on the artificial production of bone and osseous grafts . 344
Optic nerve and retina in some cerebral affections, on changes in the . 54
Opium, as a remedy in poisoning by datura . . . 276
and belladonna, on the antagonistic action of . . 279
Orchitis, treatment by incision into the tunica albuginea testis . 186
O'ROURKE, on the manna of the Hebrews . . . 285
Ovariotomy, with cases and remarks 241

PAJOT, on pelvic contraction and the duties it imposes on the practitioner during pregnancy and labour . . . 225
PEACHY, case of spontaneous cure of cataract . . . 155
PEASLEE, on the use of pessaries 249
Pelvic contraction, and the duties it imposes on the practitioner during pregnancy and labour 225
Penghawar djambi, on the 289
Perforation from gastric ulcer, two cases of temporary recovery after . 95
Perinæum, practical observations on supporting the . . 219
and birth of child between os vaginæ and anus, a case of ruptured 232
with subsequent delivery without rupture, cases of ruptured 236
PERROUD, on the antagonistic action of opium and belladonna . 279
Pertussis, case of universal emphysema in . . . 69
Pessaries, on the use of 248
Pessary, a hurtful remedial agent, the 252
Phthisis, on the question of amputation for diseased joints in . 70
on the action of hydrochloric acid in . . . 73
on the action of liquor potassæ in . . . 74
some trials of the hypophosphites in . . . 76
Phymosis as a frequent cause of urinary irritation in young children, congenital 261
Physiology, DALTON'S treatise on human . . . 297
Placenta, a new sign of post-partum detachment of the . . 227
Pleurisy and thoracentesis, a remark on . . . 65
Pleuritic effusions, on the resorption of . . . 65
Pneumonia, a record of 32 cases of . . . 57
a clinical report of 133 cases of . . . 58
on the treatment of 63
Poisoning, on the effects of an elevated temperature in the treatment of 295
Polarity, on organic 298
PORTER, a new mode of tying the femoral artery . . . 201
POWER, a case of strangulated hernia treated by inverting the patient . 180
PRATT, a new instrument for the relief of deafness . . 161
Pregnancy, and delivery upon insanity, on the influence of . . 44
on enlargement of the thyroid gland during . . 214

PAGE

PRICE, on congenital phymosis as a frequent cause of urinary irritation in young children 261
PRIESTLEY, on the treatment of cases of abortion in which the membranes and placenta are retained 216
Puerperal hypochondriasis and depression, on the use of actæa in . 237
Pulmonary artery, on emboli in the 76
diseases with primary anomalies in the costal cartilages, on the connexion of 77
Pulse, on the influence of ozonized oil upon the 86

QUAIN, on the question of amputation for diseased joints in phthisis . 70
Quarantine and the spread of epidemic disease 4

RADCLIFFE, a case of tracheotomy and artificial respiration in croup . 66
on the immediate cause of muscular contraction and sensation 308
Rectum as the first symptom of famine, on obstruction and impaction of the 88
by hypodermic injections of strychnia, on the treatment of prolapsus of the 190
Respiration, inquiry into the phenomena of 331
Retina and optic nerve in some cerebral affections, on changes in the . 54
RICHARDSON, on scarlatina 19
on the question of amputation for diseased joints in phthisis 70
on uræmia 106
on the physiological and therapeutical properties of peroxide of hydrogen 280
on certain phenomena of life 298
on the artificial production of cataract . . . 305
RILLIET, on iodism 283
RINGER, on the influence of change of posture on the characters of endocardial murmurs 81
Ringworm contagious ? is 118
ROBARTS, on the estimation of the amount of sugar in diabetic urine by the loss of density after fermentation 104
ROKITANSKY, contributions towards the history of abortions and uterine polypi 246
ROSCOE, on arsenic-eating 14
ROUGET, on the action of nicotine upon the heart 330
on the erectile organs of the female 347

SANDWITH, case of perforation of the intestine with worms in the peritoneal cavity 101
Scabies, on the treatment of 119
Scarlatina, a pathognomonic sign of 18
on 19
Scotland in a sanitary point of view 9
Scurvy in the army of the United States 23
SÉDILLOT, on dislocation of the head of the femur into the obturator foramen, with preservation of the movements of the bone . 198
Sensation and muscular contraction, on the immediate cause of . 308
Serpents, on the treatment of the bites of . . 126, 127
Serum, on the pathology of milky 87

PAGE
Sewing machine, on the hygiène of the 7
Shoulder, on the diagnosis of dislocations of the] . . . 197
SIEVEKING, on the treatment of the paroxysm of neuralgia . . 37
an analysis of fifty-two cases of epilepsy . . 53
SIMPSON, on the use of tincture of actæa in puerperal hypochondriasis and depression 237
SKODA, on the resorption of pleuritic effusions . . . 65
Sleep, on the physiology of 302
SMITH, a case of tetanus treated by aconite . . . 50
an inquiry into the doctrine of Wm. Hunter in regard to retroversion or retroflexion of the gravid uterus . . 239
on ovariotomy, with cases and remarks on the operation and its mortality 241
on the action of tea and alcohol contrasted . . 268
inquiry into the phenomena of respiration . . 331
SOLOMON, a sequela of infantile purulent ophthalmia, an unnoticed cause of epiphora 154
Spina bifida successfully treated by iodine injections, case of . 191
Stomach, two cases of temporary recovery after perforation from ulcer of the 95
Strychnia and woorara, on the mutually antidotal relations of . 294
Stumps and long bones, on the growth of . . . 142
SUCQUET, on the circulation of the blood in the limbs and head of man 328
Sugar and amyloid substance in the animal economy, on the formation of 334
in relation to the absorption of fat and the development of animal heat, on the formation of 338
SYME, on the radical cure of reducible hernia . . . 175
Syphilis by vaccination, on the communication of . . . 13
Syphilitic infants, on iritis as it occurs in . . . 260
Syphilization in Vienna, on 29

Tapeworm treated by aromatic sulphuric acid . . . 102
Tea and alcohol contrasted, the action of . . . 268
Tendons after subcutaneous division, on the reparative process in . 345
Tetanus treated by conium, a case of 46
treated by stimulants, cases of 47
treated by aconite, a case of . . . 50
THIERCELIN, on the treatment of epilepsy by curare . . 51
THOMPSON, on the influence of ozonized oil upon the pulse . . 86
on M. Civiale's experience in lithotrity for 1860 . 170
Thoracentesis and pleurisy, a remark on . . . 65
Thyroid gland during pregnancy, on enlargement of the . . 214
TILT, on the use of opiates and sedatives in the treatment of uterine inflammation 236
TODD, case of recovery after complete transfixion of the abdomen by a bayonet 192
Torpedo, researches on the electrical function of the . . 321
TOYNBEE, seventh series of pathological researches into diseases of the ear 159
on the means for preventing caries of the bones and cerebral abscess in diseases of the ear . . . 160
Tracheotomy and artificial respiration in croup, a case of . . 66
a word on 167
a case in which a foreign body was extracted from the bronchus by a bent wire after . . . 168

PAGE

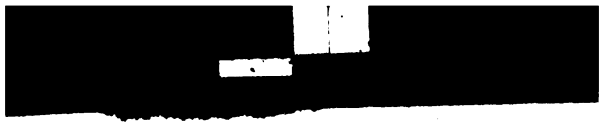
Tranens, on plaster of Paris bandages for dressing stumps after amputation 140
Transfusion of blood in cases of exhaustion from suppurating wounds . 133
Trousseau, on gout and its treatment . . . 23
on apoplectiform congestion in relation to epilepsy . 40
on emboli in the pulmonary artery . . . 76
Turner, the pessary a hurtful remedial agent . . . 252

Uræmia, on 106
Uræmic intoxication, on 107
Urinary irritation in young children, congenital phymosis a cause of . 261
Urine for seven days without head symptoms, total suppression of . 108
from paralysis or inertia of the bladder, on the use of ergot of rye in retention of 110
on the action of potass, soda, lithia, opium, and colchicum upon the 113
Urticaria produced by some of the cetaceous larvæ, case of . . . 119
Uterine inflammation, on the use of opiates and sedatives in the treatment of 236
polypi, further observations on the structure and treatment of 243
polypi and abortions, contributions towards the history of . 246
fibroid, a rare termination of 248
Uterus, case of annular laceration of the neck of the . . 235
an inquiry into William Hunter's doctrine in regard to retroflexion and retroversion of the gravid uterus . . 239
treated by surgical means, on fibrous tumours of the . 244

Vaccination, on the communication of syphilis by . . . 13
Vella, on the mutually antidotal relations of strychnia and woorara . 294
Viennois, on the communication of syphilis by vaccination . . 13
Vincke, on the penghawar djambi 289
Vitreous humour, case of encysted abscess of the . . 152
Von Graefe, on changes in the retina and optic nerve in some cerebral affections 54

Ward, on the treatment of malarious fevers in Ceylon . . . 23
Wardrop, on the effects of evacuating the aqueous humour in inflammation of the eye, &c. 145
Waring, on an affection called "burning of the feet" . . 210
Waters, on the anatomy of the human lung . . . 330
Wells, "the scale of medicines with which merchant vessels are to be furnished, &c." 267
Whey-cure and grape-cure in Germany and Switzerland, on the . 272
Widowhood, on the physiology of 346
Wilks, a means of distinguishing between cerebritis and fever . 32
Wilson, on the Eastern or Turkish bath . . . 267
Women, a clinical treatise on diseases of . . . 232
Wood, a modification of the operation for lithotomy . . 172
Woorara and strychnia, on the mutually antidotal relations of . 294
Worms in the peritoneal cavity after perforation of the intestines . 101
Wounds by sponges steeped in a chlorinated solution, on the treatment of suppurating 125
Wynter, wash and be clean 5

PRINTED BY J. E. ADLARD, BARTHOLOMEW CLOSE.



UNIVERSITY OF MICHIGAN
3 9015 06385 6044

UNIV. OF MICH.
JAN 6 1910

sup.
QbpH12
E91
209710

